

Robin McKie reports on the annual meeting of the British Association in York

Elitism blamed for loss of science talent

A restrictive, hierarchical and elitist academic system has been one of the major causes of the failure to exploit technological and innovative talent.

In a speech on science, technology and social policy, Dr S. S. Blume, of the London School of Economics, accused higher education of merely reflecting the restrictive class structure and of failing to relate new universities and polytechnics to the needs of local industries.

Instead these institutions had been modelled on traditional centres, in particular Oxford and Cambridge, whose universities were noted for their higher social class mixes and for their histories of dominating nineteenth century industrial expansion and innovations, while remaining true to their aristocratic and clerical traditions.

"Much of the prestige of Oxford and Cambridge derives from their

historic connections with the British social elite, with inherited wealth, aristocracy, with the civil service and the liberal professions - combined with British class consciousness," Dr Blume told delegates at the British Association's sociology section.

These two universities provided particularly attractive environments for scientists. For instance in 1960, a total of 39 per cent of Royal Society fellows came from Oxford and Cambridge. "All this reinforces the influence of the old universities on the English academic system - based on class, upon the cult of the amateur, and upon a residual anti-industrialism," he added.

As a result, university scientists were exceptionally committed to the pursuit of basic science - of problems largely of disciplinary interest - and were little interested in the industrial relevance of their work. A study of chemistry researchers car-

ried out by Dr Blume had revealed that those researchers who did have good links with industry were mostly not very productive scientifically and did not have a very high reputation among their peers.

"In other words the most academically successful graduates, and those trained in research, do not look to industry with any enthusiasm in deciding upon their careers," he said. "This can be understood in terms of the embodiment within the university system of a set of values quite divorced from those of industry."

"This set of values reflects the class nature of a British society. The universities are a cultural mirror, albeit a focusing one."

The problems for industry were not restricted to the academic system. Much of UK management was not suited to the requirements of industrial innovation, Dr Blume added. "On the one hand it is under-

educated and particularly lacking in advanced scientific and technological training. On the other hand management practices both reflect this and are reinforced by the hierarchical nature of a British society and the culture which sustains it."

Similarly Whitehall had been highly resistant to moves to bring in scientific expertise to the civil service responsible for the decision-making that controls the country. "Basically the problem is class, deeply rooted in British social consciousness. The values are not those of so-called post-industrial society, if anything they are pre-industrial."

Overcoming these limitations represents a major challenge to social policy-making and those who practise it, firstly to pull down the barriers of class division and secondly to fully relate our culture with the values, the unspoken assumptions which both unify and divide us.

Problems of instability and chaos

A plea for a more sympathetic response to the work of the social and physical scientists, on the part of political scientists, was made at this week's inaugural meeting of the British Association for the Advancement of Science at York University by Sir Brian Pippard, Cavendish Professor of Physics at Cambridge University.

"The problems that social and political scientists try to tackle, when represented by physical models, seem to belong to that class of problem the physicist finds more difficult to reduce to order - problems of instability and chaos," he said.

Society could be pictured as a form of chaotic flow in which the detailed behaviour of the smaller unit was unpredictable and this randomness could spread to upset the stability of the larger units which was the aim of Governments to control. Applying controls, which necessarily have delayed responses, could lead to all sorts of trouble.

Sir Brian argued that philosophers of science had done too little, by considering the harm done by selecting physics as a typical science and so encouraging physicists to see themselves as engaged on the most fundamental and therefore the most important branch of research.

Most other scientists had enough enthusiasm for their own methods to take no notice. "I think something of this false belief has rubbed off on the social scientists, many of whom are rather too apt to examine their methodologies with an anxious glance over the shoulder at the physicists, instead of getting on with the job," said Sir Brian.

There was no excuse for doing work or false reasoning. "We should do well to remember the immense difficulties confronting anyone trying to make sense of man as a social animal and encourage him to find his way without explicit help and certainly without malicious criticism, from the relatively simple minded scientist."

Physical scientists should not expect their social and political counterparts to adopt their methodologies but should hope they will find their own new and rewarding techniques.

"Nor should we expect them to make dramatic advances where we have failed but should sympathise with them for having chosen a field of study so appallingly difficult yet so important that any success, however limited, deserves enthusiastic praise," Sir Brian concluded.



The spiritual side of science

This thirteenth century manuscript illumination showing the heavenly bodies impelled in their orbits by angels was among the items in an exhibition of famous books in science, presented by the British Library at the meeting of the association.

Jobs that are hidden from history

Statistics which record a rise in the level of female employment in recent decades present only a partial and misleading picture, Dr Catherine Hakim, a principal research officer with the Department of Employment, told the sociology section.

Work rates for the nineteenth century were omitted from calculations, so that the 1901 figure of 10 per cent of married women with jobs compared unfavourably with the 1971 total of 49 per cent.

"The work rates were only regularly compiled in the twentieth century censuses, but detailed investigation revealed that the work rates for women in 1861 were as high as 1961, and similarly for 1851 and 1951. "Casting the analysis backwards into the nineteenth century shows that the rise of women's propensity to work is twentieth century myth," said Dr Hakim.

From the labour force and confined to domestic activity in the home in the early part of this century, they have now resumed their role in the labour force in the second half of the twentieth century.

"This places women's work in a new light, for it suggests that we should be asking why and how it was that women were included in the labour force instead of seeking to explain the recent rise in their work rates," said Dr Hakim.

It was also wrong to think that in recent years the traditional distinctions between men and women's

work has been eroded. In fact women have largely remained confined to typically female jobs. Furthermore the last 70 years has seen a trend towards women being concentrated in the lowest grades of white collar and blue collar work and very much under represented in the higher grades.

"There is therefore little evidence of a consistent trend over the century towards greater integration of the sexes in the work sphere as previously assumed. This study suggests that sex discrimination and equal opportunities legislation carries the burden of reversing a trend towards greater job segregation, and not simply supporting an existing trend towards the de-segregation of occupations."

The study was highlighted by Dr Hakim to illustrate the potential pool of data available to social scientists who study early census statistics. The application of modern data analysis techniques including computer studies, had frequently revealed that early census data could overthrow accepted interpretation and views of the recent past.

"If each census is a snapshot of the nation at a particular time, the series of 19 censuses over the period 1801 to 1981 document the development of national photography. The census can also tell us something about what was considered worth photographing and recording at the

time," said Dr Hakim.

Graduates rush into accountancy jobs

by Paul Flather

One in 10 of all university graduates securing permanent employment in Britain last year entered chartered accountancy according to the latest statistics.

The remarkable boom in accountancy - a jump of 11.4 per cent on the graduate intake compared with 1978-79 - reflects the increasing rush among graduates to seek out jobs that promise secure incomes.

The graduate boom has been fairly rapid for the last few years, although there was a slight lull between 1978 and 1979. At the end of last year 3,100 graduates entered accountancy according to the Central Services Unit (CSU). This year the figure could approach 4,000.

One result has been a collapse in the number of places left to foundation course students, once the traditional route into accountancy. In 1970 about one in five of the intake was a graduate, now it is more like two out of three.

Students from all disciplines appear to want to become accountants. And the evidence suggests that good classics and English graduates make as good accountants as maths graduates, as long as they are numerate.

One factor explaining the boom is the

according to the Institute of Chartered Accountancy is that many graduates simply use accountancy as a business studies training. Rough figures suggest half stay to become practising accountants, one in 10 go overseas, and the rest enter industry and commerce.

Mr Eric Hunt, director of education and training at the institute, said: "There has been a tremendous boom in the number of graduates entering accountancy in the last 10 years. But many see it as a form of quality training for business."

The boom is confirmed by leading auditing companies such as Peat, Marwick, and Mitchell as well as the top training firm, the Financial Training Group which claims to train 40 per cent of all graduates entering the profession.

Mr F. E. Worsley, chairman of the group, said: "There is a tremendous demand for places which is very understandable in times like these. Big firms are still very interested in recruiting accountants."

But the bubble could well burst in the next few years. Auditing companies are beginning to grumble about the cost of taking on a training students, particularly if they simply leave to join industry.

Type of Employer	1978-80	1979-80	Change
Public Service	7,731	7,854	+1.6
Education	1,747	1,659	-5.0
Manufacturing	4,413	4,188	-5.1
Trading	1,174	1,264	+7.7
Public Utilities	1,811	1,875	+3.5
Chartered Accountancy	3,100	2,784	-10.2
Banking, Insurance & Finance	1,825	1,192	-34.7
Other Commerce	3,407	2,938	-13.8
Private Practice	958	1,482	+54.5
Other	1,131	1,749	+54.6

Estimates. Figures supplied by the Central Services Unit.

Working class students scarce

The continuing scarcity of students from working class backgrounds in higher education was underlined in two reports published this week.

In the statistical supplement to the Universities Central Council for Admissions annual report, the proportion of university entrants whose parents were unskilled was put at only 1 per cent. By far the greatest numbers came from the top two social categories.

Applicants whose parents were unskilled or only partly skilled accounted for only a very small proportion of those offering the requisite number of A level passes. Higher social classes generally fared much better in examinations.

As in previous years, more men than women both applied and were accepted for university places, but a higher proportion of women applicants succeeded in securing places.

The report also charts the decline in applications and acceptances by overseas students, which amounted to a 13 per cent reduction during 1979-80.

The spread of applications according to subjects remained broadly similar, with law and mathematics and computing science continuing to be the most popular.

A second set of statistics, published by the Department of Education and Science, revealed that only 6 per cent of state school leavers went on to higher education, compared with 29 per cent from independent schools and 40 per cent from direct grant schools.

Statistics Supplement to the 18th report, UCCA, PO Box 28, Cheltenham, Glas. Statistics of Education Volume 2: School leavers, CSE and GCE, Department of Education and Science, York Road, SE1.

Welsh want to go their own way

There should be a minimal modification of the system of polytechnics and colleges in Wales, rather than the wholesale changes envisaged in England, the Welsh Office has recommended.

A consultative document, *Higher Education in Wales outside the Universities*, suggests the establishment of a small advisory body of existing contacts supplemented by ad hoc consultation is found to be inadequate. The idea of creating a replica of an English national body is raised but not favoured.

The document also rejects both the Council of Local Education Authorities' proposal for a national body to cover both England and Wales, and a further suggestion that Welsh institutions could be administered through a sub-committee of the main organisation. "The Government believes that the weight of opinion in Wales would be for a larger measure of self-determination than that which would be achieved in this way," it says.

Plans by the last Labour Government to set up an Advanced Further Education Council for Wales are dis-

missed on the grounds that a body of such size and with statutory powers is not needed to achieve the necessary changes. Its powers should reside with the Secretary of State.

But the document makes it clear that some changes are required because of weaknesses in the system as a whole. "The course control system tends to be reactive and cannot easily bring about innovation or significant adjustment of provision between colleges," it says. "Further, the way in which the pool works does not sufficiently discourage costly and uneconomical provision and reward cost-effectiveness."

"At a time when financial constraints require a carefully planned and co-ordinated approach on the part of the colleges and hard decisions about priorities on the part of both central and local government, the present system carries the risk of producing haphazard local decisions to the detriment of those with needs which can be met only with adequate forward planning and with either the co-operation or the direction of those concerned."

Welsh higher education is "const-

People in the dark on OU courses

by Charlotte Barry

Most people still think wrongly that formal academic qualifications are needed to get into the Open University, according to a new survey.

More than 70 per cent of people over 18 - over double those in 1971 - have heard of the OU but only one in three understands the meaning of the word "open", says its survey research department.

The survey is the latest in a series begun ten years ago to measure public awareness of the university following concern about lack of applications from working class people.

OU research fellow Betty Swift concludes that although substantially more people are aware of the OU's

existence, many still remain ignorant of its special characteristics and the range of course on offer.

"Putting over the message that the university is open to those with no formal qualifications remains a challenge, and it is particularly difficult to make those who have had little education aware of this fact," she says in the latest issues of the OU magazine *Teaching at a Distance*.

However the research shows that out of three people realize that study can be combined with a full-time job and only a third think it would take up too much time.

In general, the longer people have been in full-time education the more

likely they are to have an accurate and detailed knowledge of courses offered by the Open University.

About three quarters of those who have heard of the OU connect it with degree courses, but more than a third think wrongly that the OU offers a diploma in management studies.

Another common error is to think it offers O and A level and teacher training courses, and fewer than one in five people are aware of the community education short courses.

The research also shows that twice as many women as men believe that the cost of attending the OU is too expensive for them to consider joining.

Lothian teachers reinstated

Lothian region's fixed term contract teachers whose jobs were suspended under the region's recent moratorium on spending are to be reinstated for a period of six weeks, but 922 vacant permanent education posts are to be frozen, it was decided at a meeting of the regional council earlier this week.

The ruling Labour group succeeded in passing a motion which lifted the moratorium with only £6.7m worth of additional cuts in the region's spending. This means that Lothian have cut £23.9m. Still some way short of the £30m minimum demanded by the secretary of state.

The region are now to meet with the Secretary of State to see if he would accept the balance between the two figures being made up by £3m due to the region from Livingstone Development Corporation; and £3m which had been wrongly forecast as being needed for the rating deficit for the financial year just ended.

The Labour group decided to rein-

state the fixed term contract teachers for a period of six weeks initially in order to establish the Secretary of State's reaction to their proposals.

Lothian's education service will suffer as a result of latest cuts however with 922 vacant posts being frozen. Some 433 of these posts would have been teaching appointments, 9 nursery; 157 primary; 164 secondary; and 113 further education.

Lothian region's decision to reinstate their contract teachers now makes it highly unlikely that the Educational Institute of Scotland will pursue any industrial action. It will however be monitoring how their members are transferred from school to school to see if it conforms with their view of reasonable practice.

The advertised programme of day and night classes for adults is almost certain to suffer under the new package of cuts. A Lothian spokesman said that the programme would have to be rationalized to make savings.

Applications

from page one

essential values of the public sector. Candidates must capitalize on the virtues of all the sectors of education in future. That is quite clear," he said.

Colleges too are expecting a major increase in recruitment to diversified courses in particular. A sample survey of five institutions shows that applications are much higher than last year at all but one which reports no change.

At the City of Liverpool College of Higher Education, applications are some 20 per cent up on last year and the college fears that it may have to turn students away particularly in the case of oversubscribed courses such as English.

Although the college stresses that it is still too early to be absolutely certain that recruitment will match applications, it has had a far lower rate of withdrawals than in last year from prospective students with good A level grades.

Worcester College of Higher Education is tightening entrance requirements as a result of much increased applications to its diversified courses. The college says that the picture has changed dramatically since the end of July and it is pretty confident to meet its target and above.

At Rippon on York St John, the pattern is very similar. The college says that if recruitment matches applications, it will be full and will have to turn students away. But it points out that it is still looking for BEd students, since it is some 20 students short of the target of 155.

Derby Lonsdale College says that it is too early to be absolutely certain, but it reports a much greater interest in most of its diversified courses. Roehampton Institute of Higher Education says that although it has had a lot of enquiries, there has been no real change over last year, although it suspects this might alter in the next two weeks.

The position of the BEd is much patchier with two institutions reporting increased applications over last year, but with two others doubtful that they are going to meet their targets, and with one already on target.

Some institutions say that it is unlikely that there will be much increase in BEd recruitment at this late stage. While those with higher applications to their courses stress that this is basically only a return to pre-1980 levels.



Boyson angers lecturers

A renewed attack on the Government for refusing to state how the extra £60m to enable more young people to stay on in education is going to be allocated in 1982, has come from the leading lecturers' union.

This follows a letter from Dr Rhodes Boyson, under-secretary for higher education, in reply to Mr Mick Farley, assistant secretary further education at the National Association for Teacher in Further and Higher Education, in which Dr Boyson says that the Government is still considering the balance of central and local Government responsibility for financing the £50m allocated to England and the mechanism for distributing funds.

Mr Farley says this is a remarkable admission indicating that the original announcement was little more than a cynical exercise in political window dressing. "There seems no reason otherwise for the announcement to be made when no thought was given as to how it is to be implemented."

It is clear that the £60m is not extra money from the Treasury and that as yet the Government has no idea what proportion of the extra funding will be provided from that source.

"If local authorities are faced with the implementation of the Environment Secretary's threats, what chance will there be of them finding extra money" he asks.

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North American news

Cost rises loom

from Olga Wojtus

WASHINGTON

Costs of going to college and university have increased less over the past 10 years than inflation, although the increases for the coming session are the largest reported for one year, according to the College Board.

The educational association which, among other things, administers the Scholastic Aptitude Test taken by a million higher education candidates each year, has been monitoring tertiary sector costs since 1970 through its financial aid division, the College Scholarship Service.

Taking expenses to include fees, room and board, academic equipment, and travelling and personal expenses, the board has found these to have leaped over the past decade by 95 per cent at state institutions and 110 per cent at private institutions.

However, the cost of living has jumped by 123 per cent over the same period.

Mr Joe Paul Case of the College Scholarship Service says the main reason for this phenomenon is that universities and colleges have worked hard at keeping costs down as well as generating new incomes.

They have achieved this, he says, by putting off both the maintenance of buildings and buying new equipment, limiting salary increases for

academic and administrative staff, implementing energy saving programmes, and developing courses to attract a new clientele, such as mature students.

But for the coming session, the cost of attending a private university of college has risen by 13 per cent, and by 14 per cent for public institutions.

The survey shows that total costs for the most expensive public universities are now around \$6,000 (£3,250), less than half the cost of some of the private ones.

Mr Case said he hoped the present downward trend of inflation would mean a smaller increase in costs for the 1982-83 session.

Increased costs coupled with cutbacks in federally funded student aid programmes would mean many parents and students having to pay more of the bill than in the past, said Mr Case.

However, the College Board has published a booklet listing the costs of more than 3,200 universities and colleges, explaining how to estimate costs and needs, and providing financial aid application check list.

Even with the cutbacks, said Mr Case, there were still billions of dollars available for student aid, and it was critical for families to know what they could expect to receive from Federal, state and private sources.

Student pays for Polish visit

A student at Georgetown University in Washington has given his entire summer salary of \$1,600 to pay for two Polish students to come to America for three months.

Mr David Venning, an international diplomacy student, met Wojciech Glinka and Jurk Jozkowak, who study foreign trade at the Central School for Planning and Statistics in Warsaw, when they came to George-

town in April on a ten-day exchange, the first of its kind since the war.

Mr Venning, who runs the Georgetown University Christian Fellowship, said he felt the greatest way to relieve international tensions was to encourage such personal meetings, particularly at a time when relations were bad between East and West, and there was an unfortunate tendency to stereotype people.

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Children playing on a New York street.

'New view of child education needed'

MONTREAL

The crucial development period if children are to realize their full potential is between seven and 13 months, according to Dr Burton White, director of the Harvard University pre-school project.

Dr White was addressing the Fourth World Conference on gifted and talented children held in Montreal. Most previous research into children's abilities had concentrated on preventing failure rather than realizing potential, he said, and programmes such as special remedial education for underachievers had little effect.

America had put a tremendous amount of money and time into these projects over the past 15 years, while there had been a remarkable lack of serious scientific research into a child's first three years.

Armed with a blank cheque from Harvard, Dr White and his team pioneered research into pre-school age children, studying them primarily in the home, while most other work on children was carried out in laboratories.

Department wants own budget cut

The saga of conflict between the White House and Congress over education continues.

The Education Department, which has recently asked President Reagan to downgrade its status, now wants around \$3bn (£1.62bn) less for its budget.

Mr William Cloban, the education under-secretary, maintains Congress has been too generous in setting the department's budget ceiling at almost \$16bn, \$2.6bn more than the department requested.

The request for less money in terms of outlays follows growing fears from the administration that its

original projections of a budget deficit of \$42.5bn may be an under-estimation.

Until this year, anyone attending college or university could claim the guaranteed student loan. Now only those with an income of less than \$30,000 are eligible for GSI, but it will not be clear for another year what the cost of the curtailed programme will be, and it is suspected that not as many students will be excluded as anticipated.

The Office of Budget and Management must now review the Education Department's budget, and is likely to set a lower ceiling as ED has re-

herited was all that dominant, as the American civil rights movement had placed great stress on upward mobility through education.

"What you inherit clearly sets the upper limit of what you can achieve," said Dr White. "But you experience early on determining how much of that potential you realize. There's a tremendous waste of human potential."

The foundations for solid mental health were laid in a baby's first seven months, said Dr White.

But an extremely critical period was seven to 13 months, and Dr White said only one in 10 children developed learning abilities which would allow them to realize their potential.

Children had to be talked to, and needed time and attention from totally committed adults, said Dr White.

There should be at least two and a half years between children, he advised, as young children reacted badly to a loss of attention.

"It's like a wife saying: 'Honey, I'm bringing somebody home to live with us next week - he's a little younger and better looking than you, and I'm going to have to pay him a lot of attention because he's new, but I know you're going to love our new husband.' A two-year-old can cope with that sort of thing."

Dr White advocated no substitute for parental care during the child's first six months, with the parents sharing the responsibility, he said. Cried child care frequently being left to the mother, something that caused great stress. "Men just don't know what it's like having someone, two feet tall following them around all day."

It was vital, said Dr White, to screen children for mental health losses. These were very common, and generally not taken seriously by doctors, but they prevented the child developing as it might.

At present, all branches of education were too busy protecting what they had to explore new areas, said Dr White. But he was confident that the trend of educating parents to bring out their child's potential would take solid root.

"It will mean more pleasure and less pain for parents and young children. And it will mean we have better people," he said.

Junior faculty given degree deadline

In a move by state higher education officials to upgrade predominantly black state universities, scores of junior faculty members at North Carolina Central University have been told to complete their doctoral degrees by the end of November or face dismissal.

The action last week is a result of a consent decree reached by the Department of Education and the University of North Carolina arising from a long dispute over the quality of black higher education. North Carolina Central is one of five predominantly black divisions of the 16-campus state university.

Scores of mimeographed letters were hand-delivered to faculty members at North Carolina Central over two days. These said that under terms of the recent consent decree, any full-time instructors and assistant professors who did not have doctoral degrees must complete work on their degrees by November 30, or their contracts would not be renewed and they would not be considered for

reappointment. The step above assistant professor is associate professor and at the Durham Campus, an official said, all full-time associate professors have doctoral degrees.

The agreement between the government and state university officials was approved by Federal district judge Franklin Dupress in Raleigh, North Carolina, on July 10, after more than 11 years of litigation and negotiation.

However, the NAACP Legal Defense Fund, one of the original plaintiffs in the suits against the plainclothes system, objected to the settlement, and 10 days ago filed an appeal in Washington.

"We begged the court to stop the end-run procedure," said Mr Joseph Rauh Jr, a lawyer for the organization.

In a telephone interview this afternoon, Mr Rauh called the letter discriminatory because it applied only to the five predominantly black institutions of the system, and was a poor substitute for really upgrading

the black schools, which he said was the stated aim of those who supported signing a consent decree.

The letter to faculty members, written by Dr Charles L. Patterson, vice chancellor at Durham, was prompted by a memo from Dr Raymond H. Dawson, vice president of the University of North Carolina general administration in Chapel Hill.

"It is feasible that under this policy in the next two years we could have a predominantly white faculty," said Dr Sylvia M. Jacobs, associate professor of history.

"I had no idea whatsoever that the results of a consent decree would be so extreme," Dr Jacobs said in an interview. "They're developing different standards, and that's the wrong way to equalize. I think it's very unfair."

In an interview, Dr Patterson said that the effect of his letter was to intensify the pressure on junior faculty to complete their degrees. *New York Times*

Overseas news

Dutch plan for better lecturers

from Lionel Cohen

THE HAGUE

The compulsory retirement age for Dutch university professors may soon be reduced from 70 to 65 years.

This is one of a package of proposals announced by Education Minister Dr Arie Pals and Agriculture Minister Gerrit Braks.

The proposals are part of a plan to rejuvenate and professionalize the quality of teaching in higher education. They incorporate several recommendations from the former steering group on academic staffing which, under chairmanship of Science Policy Minister Dr A. A. van Trier, last year came out strongly in favour of abolishing the traditional research-orientated hierarchy of university staff structures.

The arrangement of staff into groups of "scientific associates" under one or more professors is outdated and fails to emphasize teaching as opposed to research, says the discussion paper on the proposals.

It recommends that faculties create new academic appointments for teaching, but with the status and salary scale of full professors. The new appointees would be called "chief lecturers", appointed for teaching skill and experience gained in either academic, government, industry or other forms of employment.

This bold attempt to bring in new blood has had a mixed reception from traditionalist quarters. But in a land where teaching has a much lower priority than research, it may prove difficult to find the range and quality of experience needed within the faculty structures.

Dr Pals clearly expects the new career structure to provide opportunities for improving the teaching quality of staff. In particular, it is proposed to replace the title and function of "scientific associates" with "university lecturers" or "university researchers".

A new temporary grading of "assistant lecturer" or "assistant re-

searcher" is proposed. Both posts are temporary training appointments, but assistant researchers would be linked to the expanded graduate research programme being developed as part of the so-called "two-phase" higher education reform. They would be working on their theses for a higher degree or advanced professional qualification. But, unlike their British postgraduate counterparts, they would have a salary and would participate fully in facultative administration.

This would also be the case with assistant lecturers, who would be on temporary appointments, devoted to the development of teaching skills and experience. This would provide a form of on-the-job training for a future career in university teaching.

On the other hand there would be no guarantee that, at the end of the temporary appointment, a tenured post would become available.

Hence a gradual "pool" of young university graduates with practical training in teaching, quite apart from training in research, would be

Yugoslavs cut student intake to curb Albanian arrest

The authorities at Pristina University, the scene of more than two months of student unrest last spring, have been using careful plans, both practical and ideological, to prevent a recurrence in the new term which opens this week.

Although in their later stages the demonstrations centred on the national aspirations of Yugoslavia's Albanian minority, they were originally triggered off by poor hostel conditions.

Accordingly, the intake of new students has been cut by 19 per cent to "harmonize" the number of students and the needs of the local economy, while a new 1,000 bed hostel has been completed, bringing the available hostel accommodation up to almost 10,000 places.

Admission to hostels will be decided first by the municipal authorities, and then by the university faculty. The students will be selected according to

their subject of study and length of studies.

No official details of the criteria to be used are available. The selection by subject, however, suggest that students reading more sensitive subjects like history or Albanian language and literature, will be excluded from the hostels and scattered in individual lodgings.

A new system of keeping order involving student proctors as well as members of the teaching staff, will be introduced in the hostels and the students' centre.

Finally, to ensure that the students have the right outlook before enrolling, special meetings were organized throughout the Province of Kosovo, in which the new students took part in discussions with politicians and representatives of the economy and academic establishment on the current political situation.

Campus numbers plummet

from Uli Schmetzer

ROME

A quarter of a million Italian O level student will enrol this autumn for university courses, according to an Education Ministry forecast.

It means that only 73 per cent of the 340,000 high school students who passed their O level examinations will enrol for tertiary education.

Only eight years ago 87 per cent of O level students sought a university education which was then facilitated by the abolition of *numerus clausus* and generous grants.

Since then campus congestion, the difficulty of graduates finding jobs and the gradual "depoliticization" of the freshmen until it had plummeted to 73.1 per cent last year, a level at which it might remain for the next few years, education experts believe.

The ministry also announced that in June this year the Italian university population stood at its lowest for years - 1,039,000 of which 280,000 were enrolled as *fuoricorso* students who

only sit for examinations but do not attend lectures.

The most interesting trend in the choice of faculties over the last academic year has been the continued decline in enrolments for medicine, the overcrowded faculty which claims that 60,000 of its graduates are out of work in Italy. The rush to medicine prompted successive education ministers to threaten the reintroduction of *numerus clausus* for that faculty.

In the 1979-80 academic year there was a decline in enrolment of 17 per cent for medicine and in the last year another drop of 3.4 per cent.

According to Education Ministry figures however last year still 14,279 students graduated from medical faculties in Italy though medical students in the last academic year made up only 8.9 per cent of the student population.

Medicine has been replaced as the most crowded faculty by jurisprudence which currently holds 16.9 per cent of campus students. Next is commerce and economy followed by literature and languages.

Exam marking system comes under fire

from James Hutchinson

BONN

There are growing demands in West Germany for the introduction of special university entrance examinations. Traditionally, the *Abitur*, roughly the equivalent of A levels, guarantees a university place in most subjects, but the arbitrary system of marking leads to unfairness.

The marking is not done centrally by independent examiners but by the teachers of the pupils sitting the examination. The strictness of marking varies from school to school even within the same town, and there are wide differences between the standards required by the *Laender* or states.

Places to study certain subjects, notably medicine, dental surgery and veterinary surgery, are still severely limited, and one of the main criteria for entry to these courses is a high average mark in the *Abitur*. According to the Christian Democratic Union in Hesse, which is in opposition in the state parliament, some people were getting poorer marks for a far better performance than others who in reality had not done so well, and this was a swindle.

The Christian Democrats claim that similar discrepancies are to be found in the marking of papers at teacher training colleges.

The German Teachers' Federation has so far resisted suggestions that a separate examination should be introduced for university entry. But many teachers agree that the quality of the *Abitur* has suffered as a result of a reform of the curricula of senior grammar school classes. Only four subjects are now required for the examination.

A recent survey among medical and biology students at German universities showed, for instance, that their knowledge of physics was abysmal. Nearly 80 per cent of the medical students had not taken physics in the upper grades of the grammar school or had had only a minimum of tuition in the subject.

The Christian Democrats in Hesse question whether the marking of some teachers and professors gave any real indication of the standards achieved by pupils and students. Industrial firms were often disappointed at the quality of students with impressive university examination results, and were therefore cautious about engaging candidates for jobs.

Further criticism has come from the leader of the main teachers' union, Mr Erich Frister. "Anybody starting a university course today can be sure of a degree - so long as he has the staying power. Certainly, he'll never be subjected to a thorough examination," he said.

English study standards drop

from Hasan Akhtar

ISLAMABAD

A government report has blamed the poor knowledge of English language among the candidates as the main cause of falling standards in the superior services examinations conducted by the Pakistan Public Service Commission.

The plan's emphasis on job-creation for younger academics should also go a long way towards ensuring its acceptability to the trade unions.

The effect would be to sharply reduce the number of academics in the highest-salaried posts - an attractive prospect to a government wanting budgetary economies.

The plan's emphasis on job-creation for younger academics should also go a long way towards ensuring its acceptability to the trade unions.

Half of the candidates who offered English literature as one of the papers for their selection examinations, failed. Some of the candidates who secured more than 60 per cent marks, displayed a commendable command and knowledge of English language and literature, said the report.

The government enquiry also revealed that most of the candidates

displayed an equally poor standard in several other subjects including Islamic studies, economics, political science and international relations. Many candidates were found to advocate Islam and solutions of national problems in accordance with Islamic teachings, as an easy way to secure higher marks or rating.

The committee which conducted the enquiry also discerned a definite tendency on the part of candidates to indulge in flattery while answering questions dealing with policies and principles.

Lieutenant General Ghulam Jilani Khan, the Punjab governor, while addressing a meeting of the provincial council of Pakistan's largest province, recently deplored the state of affairs in Education Department. He disclosed that the Public Exchequer was being charged teachers' salaries for 350 schools which never existed while several thousand college teachers were being denied their monthly salaries for technical reasons. The governor recommended "a major surgical" treatment to reorganize the Education Department.

Survey reveals drink problem

The consumption of alcohol by Mexican students in institutions of higher learning stands at 70 per cent, according to a recent survey.

This compares unfavourably with the more than 60 per cent of Mexicans who chronically imbibe alcoholic beverages.

There are no nation-wide official statistics, but the above figures are based on surveys by the Medical Services division of the National University of Mexico (UNAM) in Mexico City, and a similar study undertaken by UNAM.

Dr Raul Salazar Mendoza, chief of the gastroenterology division of UNAM's medical services, said that the abnormally high alcoholism rate at the university is a reflection of the heavy drinking habits of the nation at large.

It means that over 240,000 students at the university are addicted to some degree. Not all are alcoholics in the true sense of the word, said Dr Mendoza, but far too many are borderline or definite alcoholics.

Three years ago one out of ten Mexicans with alcohol problems was a woman. This has now narrowed to one out of five, and these figures can more or less be adapted to the campus population.

An unofficial estimate by UNAM's medical services division is that there are at least 20,000 students in all universities who are alcoholics. It is admitted that the figure may be much higher, but no official survey has ever been launched possibly because of the embarrassment this would cause.

Union fraud charge prompts fresh election

from Benny Morris

JERUSALEM

The conflict between the Hebrew University and its student union appears to be on the way to resolution, with the union's agreement to holding new elections and allowing university inspection of its books.

This marks a major defeat for union chairman Yisrael Katz and National Union of Students chairman, Tzahi Hanegbi, who backed Mr Katz during the prolonged struggle against what

both claimed to view as university attempts to curb the "union's independence".

The elections will take place in late November or early December, following the completion of a new set of union regulations by HU Professor Emeritus Hans Klinghoffer. Both the union and the university authorities agreed to Professor Klinghoffer drawing up the new rules, following the boycott by all opposition factions of the last elections, held last June. In those

elections the incumbent, right-wing Kassel faction, which is affiliated to Menachem Begin's Likud bloc and to the ultra-right wing Tzohar Party, received less than 2,000 votes from among the student body of nearly 15,000.

The opposition groups boycotted the elections, and the university authorities denounced their results as "unrepresentative" because the union rules allowed gerrymandering and fraud on a massive scale.

The past five years have seen an onslaught on the received ideas of social scientists at South Africa's five predominantly white English-medium universities, as a new "revisionist" school emerged to challenge the liberalism which prevailed for decades.

Against the liberals' view that race prejudice was the root of apartheid, operating against the rational forces of the market, the revisionists suggested that the driving force in South African society is class conflict between a white bourgeoisie and black and white workers.

That such a debate has taken place is itself surprising in a country where the Communist Party is illegal and the regime is one of the most right-wing this side of Pinochet's Chile.

Even more noteworthy, however, is the fact that the revisionists appear to be getting the better of the argument. The consequences for South Africa's universities and society could be important.

The substance of the debate itself "reflects" - but in a slightly pruned way - those going on in British and American social studies," according to Professor Alf Stadler, head of the department of political studies at Johannesburg's University of the Witwatersrand (Wits).

The revisionists attacked the "conventional wisdom" propounded by the liberals, who saw the basic conflict in South African society as between inherited racial prejudice and the integrative forces of the market. Their views reflected the pioneering social psychological studies of I. D. MacCrae, who argued that prejudices developed in black-white frontier conflicts survived into the twentieth century, and the work of economists like D. Hobart Houghton, who echoed W. W. Rostow in claiming that the demands of a modernizing capitalist economy for skilled labour and sales opportunities would gradually erode racial discrimination.

This "whig school" of South African history reached its apotheosis in 1971 with the publication of *The Oxford History of South Africa*, with its basic theme of the interdependence and integration of black and white.

The revisionist position was based on works which began appearing about this time. Scholars working abroad like Harold Wolpe, Frederick Johnstone and Martin Legassick suggested that racial discrimination not only did not conflict with capitalist development in South Africa, but had been an essential element in it.

In this view, the deliberate over-

Challenging liberal orthodoxy

Craig Charney reports from Johannesburg on the lively debate in South African social science between 'Whigs' and revisionists.



Past protest: Witwatersrand students argue with police in 1969.

crowding of blacks into small rural reserves was a way to guarantee the flow of cheap labour on which the growing mines and industries depended. While conflicts existed among white mineowners, industrialists, farmers, and workers over racial policy, these were seen as differences on the division of the spoils - not on the principle of white domination.

While reforms might make the system milder, the revisionists argue that South Africa's low-grade mines and unpromising farmland developed utterly dependent on the exploitation of black labour. A corollary of their position is that foreign investment will only intensify exploitation and strengthen the state, making economic sanctions and boycotts the only effective means of promoting change from outside.

In their theoretical perspective, the revisionists were applying the "underdevelopment theory" which writers like Colin Leys used to explain the paradox of riches for a few and worsening poverty for the many in other parts of Africa. In their practical approach to research, they were deeply influenced by the new social history taught by figures like E. P. Thompson which stressed writing history from the bottom up instead of the top down.

Though the revisionist position was only imported to South Africa from the United Kingdom in the mid-1970s, it has gained a wide audience at the English Universities since then, though it remains a minority view.

The revisionist position has been mostly ignored on the Afrikaans-medium campuses, except by a handful of scholars, and has barely made

a dent at the black universities, under tight state control.

Nevertheless, the revisionists have enjoyed an influence well beyond their growing ranks, because they have set the agenda of debate even for many social scientists who disagree with them.

"We've largely won our battle against the liberals," says Professor Charles Van Onselen, director of the Wits African Studies Institute. "In the social sciences, we dictate the terms."

Practically all of the dramatically increasing output of historical studies about South Africa in the past decade "has been done by the revisionists or by others in rebuttal or examination of what they have done," says Professor T. R. H. Davenport, a Rhodes University historian.

"Practically all of the material not

concerned with this debate has been worth considering," he adds. The roots of today's South African revisionism lie in the exodus of radical scholars from the country after the Sharpeville crisis of 1960, when fierce state repression made it impossible for them to carry on.

In the early 1970s, adds Professor Van Onselen, "the first large group of white South African students went abroad to study with those South African exiles in England."

By the time they were finishing their doctorates, the study of South African society had acquired a new urgency, as nationalist war spread on South Africa's borders and the 1976 Soweto uprising shook the regime at home.

Into this turbulent atmosphere - which also jolted some older scholars to the left - the young scholars returned to lecture and write.

Until then, Professor Stadler says, for South African scholars, "Marxism was a set of theories, it's about the mid-1970s that people start using Marxism as a tool of analysis."

Scholars were encouraged to do so by white students demanding greater "relevance" in their courses in the wake of Soweto, and by the growing numbers of black students on the campuses.

A key contribution of the revisionist school was quashing the naive optimism of many liberals about economic development, according to Professor Davenport, who now considers himself a "liberal pessimist."

The emergence of the new school has had implications well beyond the world of scholarship. Combining theory and praxis, many revisionist scholars have also become activists in black community organizations or trade unions.

A few have been so opposed to white minority rule as to attract the wrath of the state, such as Mr Guy Berger, the Rhodes University lecturer imprisoned this year for membership in the banned African National Congress.

The teachings of the new school have also been a factor encouraging critical thinking and dissent among white students in the past few years.

South African universities, of course, were hardly touched by the 1960s struggles for and after independence elsewhere in Africa, or by the fierce conflicts Vietnam inspired in Europe and America.

At South Africa's universities, the 1960s are not over. In truth, they have really just begun.

The disappearing teacher

A UGC subcommittee is deciding the fate of the next generation. Patricia Santinelli reports

The University Grants Committee's teacher education sub-committee next week decides where the fatal axe is to be wielded on education departments to reduce 1982 postgraduate intakes.

A similar exercise is to be carried out in the public sector by the Department of Education and Science in line with the recommendations made by the Advisory Committee for the Supply and Education of Teachers (ACSET) last month.

ACSET recommended an emergency cut in the PGCE intake of 25 per cent applied equally across the binary divide but not equally to individual institutions, to reduce intake targets from 10,000 to 7,500 to bring initial teacher training output for 1983 to 12,000. On the worst projections, vacancies for new entrants will be 6,000 in that year and at the best 10,000.

No immediate cut in the Bachelor of Education was recommended but only because recruitment was well below target and students likely to emerge in 1983-84 are already in the pipeline, so that actual output could only be reduced for 1985 at the earliest.

Cuts in the PGCE are not limited to 1982 intakes. The committee recommended a 10 per cent cut in the long term for both teacher training routes, so as to achieve a planned output of some 15,500 per annum, yielding 13,500 teachers annually.

In its criteria of how to apply the cuts, the committee laid down very broad terms which seem adequate,

but are sufficiently vague to endow teacher education sub-committee with ger provision if not applied carefully and lead to cuts falling more heavily on one sector than the other.

Although the committee felt the viability of PGCE provision is not at risk, it agreed that there were risks in any interim curtailment. Particularly as providing bodies and institutions are under severe financial pressure.

"We cannot be wholly confident that resources released on an ostensibly temporary basis could be retained for subsequent reapplication to teacher training. There can be no absolute guide to the level of temporary cuts which can safely be made," the committee said.

Its recommendations are that admissions to primary courses should be restricted on the grounds that demand in 1983 will be extremely limited and over production will only result in unemployment. The cutback should be done in a way which ensures that there will be capacity to expand such courses in the late 1980s.

Provision should be safeguarded in mathematics, physics, chemistry and craft design and technology and in the Welsh language. But there should be restriction or cessation of recruitment to training in subjects where there is the greatest risk of over production. Again this is to be done without prejudicing long term provision.

Neither the UGC nor the DES have much time to consider where the cuts should be made. The university sector begins interviewing for

Cultivating the arts and the artist

People get very hot under the collar at the mention of how adult education can improve access to the arts. Controversy rages about how to widen interest in the established arts and how to develop art forms more closely linked to everyday working life.

The first approach is criticized for patronising working class people by ramming an alien middle-class experience down their throats. The second is rejected for assuming there should be two cultures - one for those familiar with the traditional arts and another less demanding for those who are not.

Both issues are neatly sidestepped in an informative new book *The Arts and Adult Education* by Geoffrey Adkins, which investigates adult education provision in the arts, crafts and film.

The research was commissioned and funded by the Advisory Council for Adult and Continuing Education, working with the Arts Council of Great Britain, the British Film Council and the Crafts Council. It arose from interest generated by the Redcliffe Maud report in 1976 which argued for a rejection of the traditional divide between arts support and education.

The book says that opportunities for adults to learn about and practise the arts are widespread but patchy and would be improved by better cooperation between adult education and arts organizations like the Arts Council and regional arts associations.

"In general arts organizations and adult education agencies have not established regular channels of communication, are not sensitive to the potential advantages and are not familiar with each other's aims, practices and expectations," says Mr Adkins, a part-time literature tutor based in Stafford.

Joint ventures are comparatively rare and generally run on an ad hoc basis. A recent example is the Merseyside Arts Working Group

which has the sole purpose of encouraging cooperation.

A common cause of dissatisfaction is the failure of adult educators to determine just what is required from the visit of the individual artist or group. Tutors also tend to have a restrictive view of what artists should do - playing down the contribution they can make as artists rather than teachers.

Another complaint is the inability of adult educators to provide the most effective setting for demonstrations and performances by artists. "These failures are damaging as well as expensive, for they can confirm the divisive prejudices of both partners," Mr Adkins warns.

Among socially disadvantaged groups the arts can be an effective means of bringing their problems to light through photography, drama, ethnic music and writers' workshops.

Liaison with community arts groups with wide experience of working with districts lacking in cultural opportunities can help. Arts companies like the Ballet Rambert or small community theatre groups work in this way. Organizations like SHAPE place artists in hospitals and day centres, galleries, libraries and theatres.

A main route towards the traditional arts is to practise them, but thousands of students learning arts and crafts never see professional work. This reinforces a false distinction between amateur and professional, the book claims.

"There are adult educators who consider that adults rights to arts education have been met when they are given the opportunity to learn home crafts or silk screen printing," says Mr Adkins.

"This is a limiting view, as restrictive as the perception that places arts appreciation courses at the top of an imaginary scale of values and practical arts courses (especially crafts) at the bottom." The problem might be solved if the two types of course

1982 courses as early as October, slightly earlier than the public sector. Both need a pronouncement from the DES by mid-November at the latest, which does not leave much time for the proposed round of consultations.

Currently PGCE intake levels are fairly equally divided between the university and public sector which share the 10,000 annual target, but here the similarity ceases. University departments of education have far larger numbers on their courses, reaching a top figure of 600 in one institution as compared to the maximum figure of 300 in the public sector.

The public sector carries more than four times the numbers on general primary and middle courses, approximately 1,500 as compared to 380 in the university sector.

University departments of education have nearly double the number of students in sciences particularly in the key shortage areas of maths and physics. They have greater provision in languages (including English) which have been put on the "priority" list of subjects and which ACSET particularly wanted to see maintained and strengthened in the PGCE.

This makes the university sector less vulnerable so that cuts may never amount to 25 per cent but nearer 20 per cent.

It depends on how the UGC decides to carry out the exercise. It could recommend the closure of all primary PGCE courses since this would reduce numbers by around 400, and the largest course has no more than 60 students with the smallest around seven, and therefore could be said to be viable after if not before the cuts. However such an action would offend the criteria of protecting future expansion.

On the other hand it may decide to protect bigger courses to the detriment of others, and opt for the crea-

tion of large centres of PGCE provision. However, some smaller courses are of higher quality than larger ones.

But if the UGC went for quality rather than quantity, it would lead to protests about which courses are really effective and could result in closure of courses with a unique reputation in a particular field.

Another choice the committee has is to tell institutions to cut down a particular subject.

This would endanger subjects such as classics which are on the whole mostly in the university sector and attract only small numbers on each course. Classics is now a shortage subject and although there are only 120 vacancies a year, nationally it only recruits about 75, so that any cut might reduce this to say 40 and worsen the shortage.

Other subjects to which this could equally apply are economics, Russian, Spanish, German and sociology where provision could be detrimentally reduced.

If the university sector is vulnerable, the position of the public sector in terms of figures of total numbers on courses in individual institutions, is doubly so.

Should the DES choose to cut 25 per cent from the total of each institution, only about 39 would remain with a really viable PGCE provision. Most threatened are the 24 institutions which before any cuts have only 40-50 students. Most at risk would be the institution with around 40 students on primary, history, arts and very few in science.

If the exercise was simply limited to primary courses, it could remove PGCE provision entirely from some institutions, not only because it is the only provision, but because losing primary might result in non-viable provision altogether. There are only about four institutions which on the face of it would have viable primary courses after a 25 per cent cut. However should the public sector lose most of its primary this might result in the university sector having to lose more history and geography, so that the balance is kept.

If the exercise is carried out in terms of protected subjects such as a combination of languages and sciences, this might result in around 22 institutions emerging comparatively unscathed from the ravage of the cuts.

One other aspect which may affect the cuts is regional provision, where it may seem reasonable to concentrate provision in one institution when the subjects in question are not in shortage nationally. This kind of criteria was applied by the DES in the last wave of rationalization but at that time was not limited to the PGCE.

The public sector is much more vulnerable. Many institutions which have recruited badly to the BED were allowed to make up numbers by recruiting more to the PGCE. As a result their cuts may appear more dramatic as they will be on the basis of inflated target figures.

But although the DES may recommend cuts, they can always be rejected by individual funding authorities or bodies, on the grounds that they wish to continue financing the course because of for example its specialist nature. This may increase the burden for those institutions which are in exactly the reverse position.

There are also other factors relating to both the current existence and the future of the PGCE which both the UGC and the DES will have to take into account. Some of these have already been outlined in the ACSET report.

Most important is that the post-graduate route should be maintained, and that a balance should be struck between the BED and the PGCE.

PGCE applications were so buoyant this year that by July only a handful of institutions had places to offer and the Clearing House was advising applicants to start applying for 1982. Applicants then stood at around 18,000 an increase of 3,000 over the same period in the previous year. There seems little doubt therefore that courses will continue to recruit well.

By contrast, the Workers' Educational Association is particularly interested in widening the scope of and access to the arts. It will offer practical experience to those unfamiliar with art forms and is encouraging more use of arts events in industrial and political education courses. Last year it hosted a very successful conference on "The arts and working people".

Other providing bodies mentioned are the polytechnics, local radio, the National Union of Townswomen's Guilds and the National Federation of Women's Institutes. There are also separate chapters on specific art forms in adult education.

The Arts Council is a prime mover in encouraging closer links with adult education. Its secretary general, Sir Roy Shaw, started his working life as an organizing tutor with the WEA.

Regional arts associations are praised for showing greater willingness to cooperate than adult educators, but it is noted how arts centres seem to be suspicious of traditional adult education work and community arts associations tend to run their own schemes and courses.

The book recommends that both adult educators and arts organizations should make a far greater effort to cooperate. Joint working groups should be set up, regional coordinators and community liaison workers appointed, and local directories compiled.

The Arts Council is told to make a more determined effort to identify the role of adult education in making the arts more accessible, and regional arts associations should seek to eradicate the distinction between professional and amateur, says the book.

It also recommends that local authority adult education should reconsider the role of arts in community education, make more use of local broadcasting, and consider forming touring networks for both amateur and professional work.

"The Arts and Adult Education" by Geoffrey Adkins, price £3 from the Advisory Council for Adult and Continuing Education, 19B De Montfort Street, Leicester LE1 7GE.

Charlotte Barry

Aiming for the soldier student

Martin Feinstein examines a research project that will lead to closer links between the armed forces and Afrikaans universities.

University students fresh from two years in the army seem to be more mature, responsible and confident than their first year counterparts - but is this thanks to the Defence Force or merely the age difference?

This is the question a research team at the Rand Afrikaans University in Johannesburg has set out to answer, and although they are more than a year away from any firm findings, what could be the most significant result of their project is already clear: closer cooperation in education strategy between the SADF and Afrikaans universities.

The team is headed by Professor F. Marais, director of RAU's Bureau for Higher Education, and was formed in 1978 when the university suddenly realized it was ill-prepared for the imminent arrival of hundreds of students who had spent two years steeped in military discipline.

The researchers recently completed the first phase of the project - a comparison of the average first year and ex-military student - and are now busy with the second, which they hope will pinpoint the army's role in producing the remarkable motivation and self-discipline they found in ex-servicemen.

maturity, perseverance, obedience, discipline, willpower and adaptability - and, indeed, whether they had a depersonalizing effect on a young man.

To do this, two sample groups were selected at the beginning of 1979. On the one hand, 77 students who had completed two years' national service before enrolling at RAU that year and on the other, 485 first years who enrolled directly after writing matric in 1978. Their average ages were 20 years, 1 month and 18 years, 4 months respectively.

What emerged from the results was an identical of the ex-military student as The Type Most Likely To Succeed: ambitious, diligent and self-disciplined.

It appeared that students emerged from the barracks not only highly motivated to study hard (having swept out of the way, in Professor Marais' words, any career doubts) but endowed with more than the average first year's quota of self-confidence and "personal happiness".

The ex-military students "are very well integrated into the environment and the community... they have a greater measure of self-confidence and self-worth, as well as a greater sense of personal freedom, while they are less preoccupied with their physical condition" according to Professor Marais.

In hard numbers, this translated into pass rates for ex-servicemen in the 1979 final exams of 92.1 per cent in economics and management, 79.1 per cent in the arts and 58.8 per cent in the natural sciences - much higher than the first year figures at most South African universities.

Not unexpectedly, the ex-servicemen also show more respect for the lecturers' authority - "and this more positive attitude and behaviour... definitely shows characteristics such as discipline and perseverance".

This is exactly what the university wants. But now they would also like to know whether it is military training, or merely the maturing effect of time, that is responsible.

- and with it the signs of a growing awareness at RAU and the SADF that a joint education strategy holds the promise not only of raising pass rates (a perennial problem at all universities) but of "favourably conditioning" a large number of incoming students.

These two began in January this year when, with permission from the SADF and funds from the Human Sciences Research Council, the research team tested some 2,500 national servicemen who gained university entrance in the 1980 matric.

They will be compared with a control group of all RAU male students who wrote the same exams, once both groups have been tested again at the end of 1982.

But two aspects of the study are



SADF troops on manoeuvres

certain to worry academics who place a high premium on university autonomy and academic freedom.

Firstly, the possibility that a joint RAU-SADF strategy to bridge the transition from soldier to student may find itself unwittingly wound up with the government's "total strategy" of which the SADF is an integral part.

Secondly, the possibility that RAU may begin recommending national service before university as a matter of course, if the study shows that this sequence guarantees a more obedient and ambitious student. Such a move could drastically change existing career patterns.

Already, according to the results of phase one, more than half the ex-servicemen gravitated to the faculty of economics and business management, leaving only one registered in the faculty of education.

The issue is also of great scholarly interest, says Professor Magda. Neither the United States nor Zimbabwe has studied the higher education problems of soldiers returning from the low-profile, high-tension wars in the jungles of Vietnam, South Africa with the dubious distinction of pacesetter in this field of research.

Another reason why such research is important is that the ex-military students' eagerness to be not always backed by ability: the researchers noted that they had much difficulty particularly in the sciences - with studying, reading, concentrating and revising.

But the wider academic community is likely to frown on RAU's policy efforts in this direction if they stray beyond the problems at hand and equate education with patriotism.

Mind reading

The common ground between literature and psychology is well worth exploring, writes David Aberbach.

Literature and psychology are not usually taught together. Yet, they illumine and support one another, and they should be regarded as inseparable. Over the past three or four generations the spread of excessive academic and clinical specialization has cut the two disciplines apart. It is important that they be joined together again.

Until the end of the nineteenth century, most of what was known of human psychology was contained not in clinical reports, but in literary masterpieces. The Renaissance gave man the impetus to study himself; artists held the mirror up to man. Before the time of Freud, Shakespeare was thought to be the greatest master of human psychology ever to live. The German scholar Schlegel could write of Shakespeare: "Of all poets, perhaps, he alone has portrayed the mental diseases... with such inexpressible, and in every aspect, definite truth, that the physician may enrich his observations from them in the same manner as from real cases."

An extraordinary attempt at self-analysis and a harbinger of Freud is Wordsworth's poem *The Prelude*, first published in 1805. Wordsworth does not deny that his memory of childhood may, at times, have been faulty, but much of the poem is "the naked recollection of that time". Yet, many themes in this work and others — the isolation, the sense of desolation, the depression, the haunting presences, the union with nature, the yearning for a lost paradise, and the hostility — are familiar ones in recent work of psychoanalysts such as John Bowlby and Sylvia Anthony who have made studies of childhood loss.

Sylvia Anthony, pointing out that Wordsworth lost his mother at the age of seven and suffered the complete break-up of his family, gives an illustration of the importance of Wordsworth to psychologists today. She refers to the poem *We are seven*: "What is here most striking to the psychologist today is the attitude of an adult who seeks not to teach the child but to learn what and how the child himself is thinking."

Psychologists cannot deny that writers have unusual insight into human nature and rare power to depict complex states of being. Still, they do not fully appreciate how much literature has to offer them; particularly in the study of childhood and the effects of family disruption. In her book *Children Under Stress*, Sula Wolf emphasizes how hard it is to study early bereavement. "Many studies of the later effects of bereavement are of necessity retrospective. They depend on the recall by adults of events that happened many years ago. Moreover, a host of other factors have intervened between the bereavement in childhood and the observed outcome in adult life."

In view of their ignorance of bereavement — and of other human problems — psychologists would do well to take a closer and more systematic look at the work of writers. A disproportionate number of writers — including most of the great Romantic poets — were orphaned in childhood and experienced much family disruption. Some of their best work deals directly or indirectly with the effects of early loss. The ordinary person cannot give expression to the effects of family upheaval. Writers, however, often spend their lifetimes searching for ways of expressing and coming to terms with traumatic early experiences. For psychologists to ignore their efforts — and those of other artists — would be unfair and unwise.

Students of John Bowlby should not be ignorant of Wordsworth; indeed, they should be provided with courses in psychological aspects of literature as a part of their training. Much of the best literature depicts the same problems with which they will confront daily: family disruption, faulty bonds within the family, psychological instability and breakdown, death and the fear of death,

childlessness, old age. The writer's capacity for describing these problems is infinitely greater than that of most trained psychologists. The true artist enables us temporarily to enter his world or the world of his characters. This the clinician's report cannot do. Clinical language used to describe troubled people is limiting and sometimes insensitive and degrading. There is always the danger of seeing people as "cases", of attaching too great importance to the abnormal side of human nature, of forgetting that people in need of help have individuality other than their problems.

However, as much as literature could be put to serious use in psychological studies, the study of psychology is indispensable in literary studies. Critics frequently allude to psychological theories and findings. A vast literature has grown up in which creative prose and poetry are treated from a psychological angle, often using biographical material. However, with few exceptions, such as Edmund Wilson's *The Wound and the Bow* and Alfred Alvarez's *The Savage God*, literary criticism as it stands today is of limited use to the person who wishes to study literary themes from a psychological viewpoint. Much psychological literary criticism is badly done. It fails to clarify literary texts and leans too heavily on jargon, both psychological and literary critical.

A particularly valuable project would be the compilation of readers, each dealing with a specific theme, such as childhood loss. Each work would contain a wealth of well-chosen examples from world literature illustrating the theme. An introduction and commentary should, ideally, be included. Such edited texts would be of great use to students of psychology as well as to students of literature.

At the same time, literary criticism could benefit far more than it has done from the findings of psychologists. For despite its shortcomings, the psychologist's report often does give us the bare bones of personality, the underlying mechanics without which many literary works cannot be understood properly. Knowledge of the causes and manifestations of mental illness is an invaluable asset in understanding many works of literature. (A recent, unusually clear and erudite account of various types of artists and the psychological motivations underlying their art is found in the opening chapters of Anthony Storr's *The Dynamics of Creativity*.) For students interested in psychological aspects of literature, there should be relevant courses.

In addition, the literature tutor's role should be reassessed in the light of its deeper importance. The undergraduate period is frequently a time of emotional crisis. A tutor often finds that he is needed not only as a teacher of literature, but also as a confessor in personal matters. For this reason, tutors in literature should receive basic training in psychological guidance and be able specifically to direct their students' reading in areas liable to give them insight into their own lives. Also, more active attempts should be made to encourage students of literature to do social work.

To sum up. Literary analysis have not made full use of the findings of psychologists. Neither have psychologists benefited sufficiently from the creative literature. It is necessary that there be greater co-operation between the social services and literature facilities in universities, polytechnics and, perhaps, schools. Each can act as a corrective to the failings of the other: psychology to the sterile aestheticism and socially linguistic analysis; in which literary criticism; and literature to the dehumanizing element in psychological medicine.

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A moderating influence

Kenneth Midgley describes his work within the Business Education Council

Among the innovations introduced into higher (and further) education by the Business Education Council is the office of the course moderator. While the term is not new, the combined Pooh-Bahian function of assessor, adviser, guide, diplomat and friend of the college is, outside of Gilbert and Sullivan, something of a novelty.

The many activities of a moderator vary somewhat with the level of courses for which he is responsible, but at higher award level, with which this article is mainly concerned, they include visiting the college centres three times a year, agreeing assessment and assignment plans, moderating time-constrained examination papers, scrutinizing students' work and reports and possibly participating in a national post-course comparative evaluation of examination scripts and assignments. More broadly, a moderator is expected to ensure that a centre conducts its courses in accordance with its approved scheme(s), help maintain the standard of BEC's awards and encourage good practice and innovative ideas.

On appointment, a moderator is sent a first consignment of BEC literature, of which there is an abundance. He will also receive copies of the course schemes for the centres allotted to him. These too are likely to be copious, resembling telephone directories in their bulk. It soon becomes evident to the new appointee that he had better set aside a large cupboard, preferably a small room, for his moderating activities. The amount of work involved depends, inter alia, on the size of the scheme, the number of staff concerned, the number of modules and outstanding problems relating to conditions imposed on approval of the scheme by the BEC validation committee.

Commitment to BEC philosophy and policy is something which is looked for in a proposed centre scheme and its implementation. Whether or not it deserves it, BEC "philosophy" does seem to have acquired an *avant-garde* reputation. Briefly, BEC aims to provide a vocational education, to encourage students to be adaptive and creative, to relate coursework to the business environment, to ensure that the contents of courses are inter-related and co-ordinated, and to see that certain fundamental concepts, pertaining to the importance of money and resources, working with people, good communications and a logical and numerate approach to business are integrative factors in the learning process.

Special features of a BEC course include compulsory core modules, which are required to develop the students' understanding of the central themes, and option modules. Each module is tested both by in-course assessment and time-constrained examination. A further important feature is a programme of cross-modular assignments which is designed to develop coherence and interrelations within core studies. This element is also subject to in-course assessment.

How does all this work in practice? In my experience, curate's eggish. Much has been written about the good parts, not least in BEC's own publications. Much has been said about the *right* good parts, though not so much written.

One of the best features of the BEC system is that it emphasizes the planned, coherent, problem-centred learning. It also encourages imaginative preparation of teaching programmes by staff and helps to develop initiative among students. On the whole I have formed an impression that a better spirit prevails among BEC higher award students than was to be seen among similar students under the old joint committee rules. The device of subjecting college courses to the scrutiny of an outside moderator is, at least in principle, a stimulating influence which helps to avoid complacent insularity.

These are very considerable achievements and though given only brief mention here, this is not to underestimate them. However, there may be more effective and efficient methods

of achieving the same ends, or of improving on them. In this respect, while BEC presses colleges to undertake self-evaluation of their courses and procedures, it has not, to my knowledge, indulged in a full-scale evaluation of its own procedures and policy. In requesting information from moderators the accent is on how centres are implementing BEC policy and procedures rather than on how effective these are in practice.

Let moderators are well placed to help in this latter respect. Perhaps the most commonly-voiced criticism of the BEC system for the planning, organization and control of courses relates to the sheer weight of resources (not least paper) that this involves. Course submissions are often bulky and verbose and can become an over-elaborate window-dressing exercise which does not bear a close relationship to the ultimate reality of the course. BEC may disclaim responsibility for these ponderous documents, but it has done little to dispel the sardonic observation that merit is judged by weight.

One of the reasons for the excessive girth of some college schemes is the listing of learning objectives, which can run over several pages for each module. While a statement of general objectives seems sensible and desirable, one questions whether it is really useful to spell out in tedious, pedantic detail that the student shall be aware of this, shall understand that, shall gain an insight into the other, and so on.

Many schemes originally submitted by colleges were deemed unsatisfactory but given approval for one or two years, the result being that barely had the course got under way than yet another large and sometimes preposterous volume was in the course of production. This state of affairs can be most unsettling, and, though perhaps inevitable under present arrangements, there is some danger that more effort is put into composing an over-ambitious statement of intent than actually carrying out that intent. Means should be devised of encouraging more concise and flexible schemes and greater concentration on implementation: that is less commitment to paper and more commitment to action. Many well-balanced integrated and successful degree schemes are contained in water-like packages compared with some of the bumper-BEC volume.

One way in which BEC could help would be to produce model higher award schemes (models of brevity, hopefully) including a fair range of module specifications. Colleges could then adopt parts of the scheme and modules if they so wished and a great deal of tedious paper work could be avoided all round.

As for the structure and regulations of BEC higher award schemes, more debate is needed concerning some aspects of BEC courses before they become crystallized and unassailable. Brief mention only can be made of some of the questions which merit serious discussion. One contentious issue is whether the core approach is developed too soon in BEC courses during the first year. The "business environment-type" module seems to give rise to the greatest difficulty and to various interpretations in terms of its implementation. Critics argue that there is need for a basic disciplinary approach prior to core studies if subsequent problem-centred assignments are to be undertaken with sufficient rigour. Some move in this direction could be linked with a revision of conversion course arrangements as they stand at present. In practice on full-time courses, there seems to be little discrimination between BEC national award holders and students with no knowledge of business, that is, typically, they all attend an initial conversion course of about a month, though some form of extra tuition/studies may extend to the end of the

first term. It is in this first term that there could be built in a thorough-going introduction to basic business disciplines prior to development of core studies thereafter.

Also, rules relating to entry of students to part-time higher award could be improved. At present a student aged over 21 without A levels may be allowed direct entry but a 19-year-old, even with A level passes in, say, three business subjects, must take a one-year part-time conversion course. This can result in an excessive degree of overlap for the latter student-type and it may be for such reasons that part-time conversion courses are not well attended.

As to the moderator's role, there are several practical difficulties which need to be considered. Firstly, it can be extremely time-consuming, and others as well as myself have found that this work can intrude to an unacceptable level on one's normal academic responsibilities, and have withdrawn their services. BEC usually stated that a moderator would normally be limited to three centres, but four or five have often been allotted.

A further problem is that centres can vary enormously in terms of work generated for the moderator so that while the visiting time may be adequate for a centre with a small course, it is a very different matter when one is visiting a large centre with full-time and part-time courses, perhaps 30 or more modules and as many members of staff. The time is then quite inadequate for in-depth inquiries and full discussion.

Moreover, however wide one's experience and qualifications, the moderation of examination papers ranging over the whole ground of business and administrative studies can be no more than an application of good principle and commonsense, brought to bear in some instances. The time constraint in moderation numerous scripts over a short period towards the end of June again imposes limits on the moderator's task.

As the moderator provides a close link between centres and BEC it seems sensible that he should be closely associated with BEC's validation committee. He has not of right been co-opted to this committee, and though recently invitations have been extended to him to sit with the committee when one of his centres has been discussed or visited, this desirable advance does raise the difficulty that the moderator is not in fact further views for BEC activities.

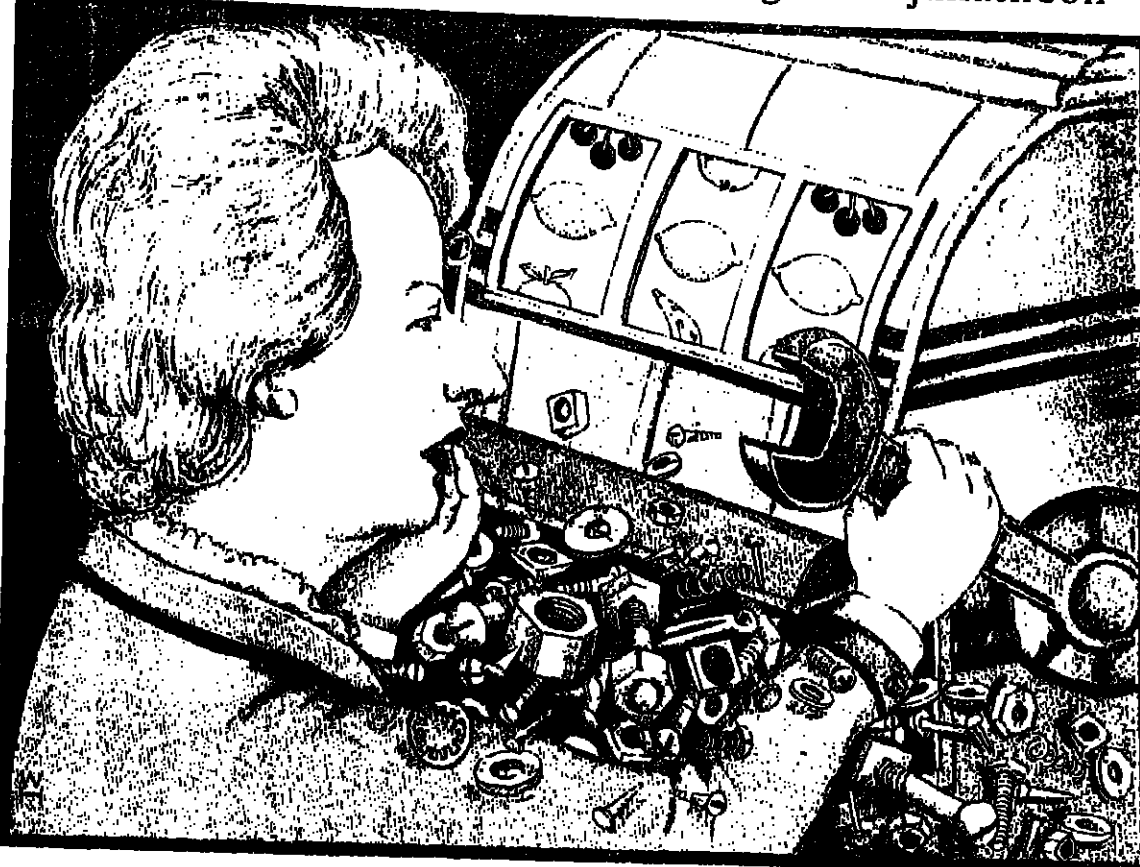
In view of the difficulties, it is therefore scope for improvement? One can suggest possibilities, but it is important first to point out that many of the teething problems at centres have now been overcome. Centres are establishing self-evaluation procedures, and generally courses are being run much more in keeping with BEC policy than two years ago. One approach could therefore be to scrap the regular three-times-a-year visits but rather concentrate effort in areas where it is needed. Because of the need for moderators to be more closely associated with the validation committee and BEC administration in London, and the problem of finding time for the work involved, there may be a case for full-time moderators or the secondment of moderators for a limited tour of duty. There may also be scope for a change of approach to moderation of end-of-session examinations so that papers and scripts are assessed by a subject specialist, possibly on a selective basis. The present post-event annual review of standards lacks force because of the time lapse. The assessment rules (in the notorious BEC 477) are, like too many other BEC documents, tortuous and diffuse. They could surely be made simpler without loss of equity. Indeed, as BEC's laudable aims could be made more attainable, more clearly understood and more appreciated, if some strong, silent expert in communications pruned all BEC literature to a half of its length.

Modern economic theory has come to the conclusion that there is no point in the distinction between productive and unproductive activities. If the product of an activity is wanted by the individuals who are consuming it, then that activity must be productive. This criterion applies to products that are bought and sold (either physical goods or services) and to products that are allocated through the state (again, either physical goods or services).

Activities that produce cars, microchips, legal advice, free medicine or educational advancement are all productive because they are wanted.

The myth of the industrial money-spinners

Public sector cuts do not help economic growth, argue Francis Green, Phil Baugh and George Hadjimatheon



It has recently been argued that we in the UK need to concentrate more of our resources on wealth producing industries. This involves a general policy of reducing tax disincentives, but also it has come to have substantial implications for educational policy. These are expressed partly in the appearance of the Finniston report, which recommends especially favourable treatment for engineering training, partly in proposals to concentrate the polytechnic sector still more on technical training, and partly in general cuts in education budgets which along with other cuts in state expenditure are intended to make room for extra production of wealth in the private sector.

However, these arguments are carried on without any real thought to what is meant by wealth. The result is that policy prescriptions in this area tend to be at best arbitrary — in the sense that it is difficult to justify them either practically or theoretically — or, worse, plainly inconsistent.

Let us consider what is meant by the "production of wealth". If this is to be meaningful and useful it implies that there must be some other kind of production which does not result in wealth being produced. This gives rise to the notion of "unproductive labour" as opposed to "productive labour" which produces wealth. It is probably true that many people have some conception of such a distinction, and that productive labour is regarded by most with more approval than unproductive labour. Also most people would like to think of themselves as productive workers.

These vague and subjective notions at least partly reflect the obvious fact that most people know what they do but naturally not much about other people's work. They certainly could not be the basis for an overall policy. But in times past policy makers, philosophers and economists had rather clearer notions of what was considered productive.

Let us take some examples. In the seventeenth century it was generally thought that wealth was gold, or precious metals. These activities which did not result directly in the accumulation of wealth in the country as much as gold or silver were considered unproductive. This meant that government policies should promote exports from the country (which bring in gold) and discourage imports either by making them illegal or by high tariffs. These policies partly reflected the fact that the dominant influences in political affairs came from merchants: this was in the days before industrialization.

Later on wealth producing took on a new meaning: it came to mean, essentially, farming because only things produced on the land were valuable. Again, policies were in force encouraging agriculture above other sectors. These were heavily criticized by Adam Smith in his famous work *The Wealth of Nations* in which he pointed out that industrial capital — not Smith and his followers still preserved a distinction between wealth-producing industries and unproductive activities. The latter, in his view, were service industries, where the service was directly consumed by the consumer, as with domestic services. But while these unproductive activities were in some sense different from productive ones, that did not mean they were unnecessary or useless. They could be said to be indirectly productive. Thus, for example, Smith strongly supported the provision of education by the state. This did not directly produce wealth, but indirectly it did.

Modern economic theory has come to the conclusion that there is no point in the distinction between productive and unproductive activities. If the product of an activity is wanted by the individuals who are consuming it, then that activity must be productive. This criterion applies to products that are bought and sold (either physical goods or services) and to products that are allocated through the state (again, either physical goods or services).

Activities that produce cars, microchips, legal advice, free medicine or educational advancement are all productive because they are wanted.

Anything that is useful to somebody is wealth. A service is in general neither better nor worse than a physical good. Sometimes a service may serve exactly the same end as a good: for example, a washing service and a washing machine.

The identification of wealth with physical goods is almost infantile — we prefer things if we can touch them. A little mature reflection shows this to be a mistake. If I labour to produce canned beans or luxury yachts I am being productive; but no more productive than if I labour to teach a willing student about the beauty of Beethoven's music or the workings of the economy, or how to build machines or split atoms. You cannot touch the understanding produced but that does not make the teaching activity any the less worthy or necessary.

Hence there can logically be no economic argument on this basis for treating some production activities as better than others or for devising policies to treat selected activities favourably. (This does not preclude non-economic arguments that may be used to prohibit certain activities, perhaps on moral grounds.) Of course, any economic system will have a method of allocating resources between different activities, some placing more reliance on the price system, others based more on a planning system. Questions of allocation rest on a host of other factors, but they do not rest on a spurious distinction between productive and unproductive activities. Indeed it is difficult to see how economic theory could come to any other conclusion: it must abandon the distinction, if it is to continue to hold that production activities should be devoted to satisfying wants.

Despite this, the distinction has in recent times been reintroduced, in one form or another, by economists and politicians of varying persuasions. We find that in public pronouncements on economic policy the notion of "wealth-producing" activities is often used interchangeably with the notion of "growth-producing" activities, even though the concepts are different. It may well be legitimate to pursue an analysis with the purpose of identifying those activities which are capable of enhancing the growth performance of the economy. A growth policy entails first of all encouraging investment and discouraging consumption, but, secondly, the question arises in what way?

It is at this stage that the wealth-producing industries argument is commonly brought in to suggest, incorrectly, that wealth is produced

almost exclusively in the private sector and particularly in the manufacturing industries, and that investment should be concentrated there. This confusion may be reinforced by the pejorative connotation surrounding the notion "unproductive". As soon as the public sector is categorized as such, it does not take long for an additional unwarranted assumption to be made: that it is too large (relative to what?) As soon as we abandon the distinction between wealth-producing and other industries, it becomes equally possible to argue that growth would be enhanced in the long run if investment is evenly balanced between sectors, or maybe concentrated in, for example, education and training. One reason why the outputs of public sector activity are generally underestimated is that they tend to materialize in a different sector. A teacher does not produce wealth in the sense of making money for his or her employer (the state), but, not least, this is apart from the advantages of education per se, is indirectly productive because the trained student becomes a more productive worker.

Nonetheless it remains true that some economists believe resources should be concentrated in particular sectors of the economy in order to promote growth. Claims have been made at various times that:

- manufacturing is more important than other activities for our growth and welfare;
- activities in the public sector are not only unproductive but by pre-empting resources they constrain the growth-producing potential of private-sector activities;
- within manufacturing, "engineering" is of special importance.

John Mace (*THESE* July 13, 1980) commented on the problems associated with this third claim. While we reject the wealth-producing industries argument, there are other arguments on each side especially in the case of the first two claims which require some comments.

The notion that manufacturing was an engine of growth for the economy dates back at least two decades and has been reflected in such unsuccessful policies as the Selective Employment Tax which attempted to penalize service industries. Now although it is clearly right at certain times to prioritize certain industries (eg. munitions in war-time) the evidence that concentration on manufacturing promotes long run growth is highly controversial.

Let the reader should think there are any easy answers we present the international comparisons argument

in Table A. This shows that although UK manufacturing employment has recently fallen its experience is by no means unique, when compared to other countries with better growth records. While the proportion in manufacturing employment in the UK in 1975 was less than in West Germany it was more, for example, than in Japan, Sweden or France.

The decline in the relative importance of manufacturing in terms of its contribution to output and employment is to be found in other countries besides the UK. That does not mean that structural problems are unimportant for Britain, but equally one cannot simply argue that manufacturing should grow at the expense of other sectors any more than one can argue the same case for France.

The notion that too large a public sector is inhibiting growth is a more recent one, but it is now the basis of government policy. Cuts in education spending are an aspect of this general policy of cutting expenditure, which it is believed will eventually lower inflation and unemployment and raise the growth rate. This belief emanates from the hypothesis that government's interference with the market mechanism is destabilizing and that the system left to itself is capable of achieving full employment.

TABLES

Table A. Proportions of total employment in manufacturing in various countries.

	1950	1960	1970	1975
United Kingdom	34.7	35.8	34.7	30.9
Belgium	32.7	33.5	32.7	30.1
France	32.7	27.9	27.8	27.9
Germany	32.7	34.7	37.4	35.9
Italy	32.7	26.6	31.7	32.6
Netherlands	30.2	28.8	26.2	24.0
Japan	30.2	21.3	27.0	25.8
Sweden	30.2	32.1	27.8	28.0
United States	34.4	33.6	32.3	29.0

Source: De-industrialization, edited by F. Blackaby, p. 237.

Table B. Total Government Spending as Percentage of Gross Domestic Product

	1950	1978
United Kingdom	30.2	41.4
Austria	21.2	39.4
Canada	19.0	36.3
Denmark	18.1	40.0
Finland	20.4	34.5
France	25.7	40.8
Germany	25.3	40.9
Greece	19.6	27.4
Ireland	23.0	43.3
Netherlands	23.9	51.6
Sweden	23.7	60.1
Switzerland	19.3	30.3
United States	20.0	40.0

Source: Morris Beck: 'Public Sector Growth: A Real Perspective', *Public Finance*, No. 3, 1979, p.338.

It has been repeatedly and convincingly argued (eg. by Cambridge Professors R. Nield and F. Hahn in *The Times*, February 1980 and Professor F. Modigliani in the *American Economic Review*, March 1977) that there is neither reliable empirical evidence nor sound theoretical analysis to support the hypothesis. By comparing UK performance with other industrial countries, Table B shows that neither the level of government expenditure as a percentage of Gross Domestic Product nor its rate of growth have been exceptional in the UK in the last 30 years. Countries such as Sweden, Holland, France and Germany have relatively higher spending as well as better growth records. (Moreover, if we were to look at the composition of government expenditure we would find that the UK has special features — rather a low proportion is spent on education, while in defence spending the UK is second only to the US).

Such comparisons are however of limited value in diagnosing Britain's economic problems. They serve only to show the need to avoid simple prescriptions. They do not preclude the possibility that there are severe structural problems in the economy, but these problems are best looked at in a longer historical context taking into account the special ways in which Britain emerged from the war. There are alternative explanations for Britain's relatively slow growth rate.

What, then, are the implications for educational policy that come out of these debates? We argue that there emerges no reason to alter the basic and widely accepted Robbins principle that higher education should be available to all those qualified in any area to benefit from it, and that sufficient resources should be devoted towards this end.

The wealth-producing industries argument is a spurious one as it rests on a mistaken concept of wealth. Therefore it has no implications for education. But even if it is claimed that there were especially wealth-producing industries, and this were to be the basis of educational policy, this would result in a very narrow view of education, that it should be devoted to maximizing the wealth (as narrowly defined) of the nation. Even if we were to take a strictly market view of education there is no evidence that education should be concentrated in particular subject areas.

As for the arguments over the best strategy for producing a higher rate of growth, these are so complex and controversial it hardly seems right to base a selective educational policy on an economic argument that is, to say the least, unsubstantiated.

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BOOKS

A mediocrity held in high esteem

Anthony Eden: a biography
by David Carlton
Allen Lane, £20.00
ISBN 0 7139 0829 7

by Christopher Thorne

David Carlton's new study of Eden will doubtless be followed by several more in the next five to ten years, especially when the official archives for 1955-56 are opened to researchers. Dr Carlton himself intends to revise the present volume when that time comes, meanwhile he has already had the benefit of access to the diary of Sir Evelyn Shuckburgh, Eden's Principal Private Secretary at the Foreign Office in the 1950s, and has made good use of this opportunity.

Overall, he offers a clearly-written survey which will need to be taken into account by all students of British foreign policy from the 1930s to the 1950s. It is evident, moreover, that he has striven hard – indeed it will be suggested below, too hard – to reach a balanced assessment of the controversial figure who stands at the centre of the book.

On several aspects of Eden's career, Dr Carlton provides evidence and arguments which serve to reinforce views which other historians have already been advancing. His book underlines, for example, how undeserved was Eden's reputation as having been a staunch and clear-sighted opponent of "appeasing" the dictators in the 1930s. Over Abyssinia, his assessment of what could be done was, as Dr Carlton puts it, only marginally more "advanced" than that of Hoare. His views on Mussolini at the time were "no more consistent" than were Hoare's or Simon's, while it was only belatedly that he began to see the danger of Hitler. Eden's initial first-hand impressions were favourable, and in 1934 he described the former's position and policies to the follies of "the Barhous of this world". Having adopted a flexible attitude towards German rearmament in the mid-1930s and supported passively over the Rhineland re-occupation in 1936, he followed a course during the Czech crisis of 1938 which left him, in Dr Carlton's words, "far from an unequivocal opponent of Munich".

Nevertheless, Eden was a decidedly fortunate politician in this period. He emerged from the Abyssinian episode unscathed in the public mind, and his resignation early in 1939, which Malcolm MacDonald believed from close observation to have been due to a considerable degree to mental and physical exhaustion – saved him from having to accept responsibility over the fate of Czechoslovakia. Above all, his suitably idealistic speeches at Geneva on disarmament issues in the mid-1930s had identified him in the eyes of many well-meaning but muddled fellow-countrymen as an upholder of the good in international affairs. In fact, however, as Dr Carlton emphasizes, Eden was never a League of Nations zealot for causes of a genuinely international kind. The League, with its Anglo-Saxon design and its focus upon European affairs, could fit into such an approach in the early and mid-1930s, whereas the "new" United Nations that emerged in the 1950s and 1960s, no longer a mirror to British preoccupations, was to be distasteful to the former hero of Geneva.

Something of the same pattern is discernable in Eden's attitudes towards the Soviet Union: a relatively "soft" approach in the 1930s and Second World War, giving way to the discovery, in 1948-49, that Moscow was motivated by an evil and ever-menacing ideology; and yet even then, an underlying concern with Britain's spheres of interest rather than with the need to embark upon a world-wide struggle in the cause of freedom and decency. In this connexion, Eden's relations with Washington during the postwar years

are obviously of considerable interest, and here Dr Carlton has some valuable things to say. Notably, he demonstrates the strains which frequently surrounded Eden's dealings with Acheson, and, in contrast to what is commonly believed, his reasonable and professional relationships with Dulles before the Suez crisis, notwithstanding their 1954 clash over the question of security in South East Asia.

However, of the relationships depicted in the book, the one that doubtless will arouse the most interest is that between Eden and Churchill. And here, too, Dr Carlton is both forthright and persuasive, taking further the analysis already developed by Elisabeth Barker in her *Churchill and Eden at War*. It is clear that both men greatly exaggerated – at times idealized – in their memoirs the depth, duration and extent of their friendship and political partnership. It was not simply that they engaged in those well-known and fierce wartime disagreements over de Gaulle and his movement, or adopted sometimes widely differing approaches to the Soviet Union (Eden, for example, privately disapproving of Churchill's celebrated "iron curtain" speech at Fulton in 1946). In terms of domestic politics, Churchill, Dr Carlton argues, treated the younger man as a potential rival in 1939-40, as well as subsequently forsaking his own earlier assurances when making the latter wait an unconscionable time before grudgingly (and, it seems, with some doubts as to his suitability) allowing him to move into 10 Downing Street in 1955. Eden, for his part, was far distant from Churchill in the mid-1930s (taking care, rather, to keep on good terms with Baldwin), and was by no means convinced that it was Churchill who should succeed Chamberlain in 1941.

In 1942, and again during the 1951-55 administration, he became extremely critical of the other man's leadership, though typically and feebly wavering between revolt and acquiescence. After 1942, indeed, his loyalty remained less than wholehearted, for in the following year, over both the American determination to undertake "Overlord" in 1944 and Churchill's wish to exclude the Russians from top-level inter-Allied discussions, he privately urged Washington to oppose the inclination of his Prime Minister.

Given the evidence and arguments on these and other topics which Dr Carlton himself puts forward in the body of his work, together with the material that has emerged in other studies, it is difficult not to feel that the conclusions arrived at at the end of this book tend to be excessively generous, even bland at times, over Eden the man, Eden the writer, and Eden the practitioner of foreign policy. On the man, my own interviews have by no means borne out Dr Carlton's judgment that Eden "was undoubtedly held in respect by most officials in the Foreign Office" – though that is not to say that his skills as a negotiator were not acknowledged and valued. The "growing irritability and restlessness" which Dr Carlton notes, in respect of Eden's 1951-55 spell at the Foreign Office, had made itself felt often enough in the war years as well; a tendency to conceit and excessive touchiness had been noted by some contemporaries well before that, as the author acknowledges. When every allowance has been made for the political pressures and ill-health that beset Eden in 1956, the excitable, unstable and devious way in which he conducted his policy on which occasion also reflected weaknesses of long-standing. (In addition, of course, as Dr Carlton recognizes, there was probably the burden of knowing that the reputation of having dictated before the Second World War had scarcely been earned.)

When turning to the three volumes of Eden's memoirs, Dr Carlton rightly emphasizes the gross distortion of the facts of the Eden episode which runs through *Full Circle*. Surprisingly, however, he goes on to suggest



"The Heir", a 1954 Punch cartoon showing Eden's impatience to succeed Churchill.

that the other two volumes, *Facing the Dictators* and *The Reckoning*, are "likely to stand high among the political memoirs of the twentieth century". One can take issue with the judgment in the first instance on the grounds that – as Dr Carlton himself acknowledges – the writer's grasp of several major aspects of international affairs had been extremely tenuous from the outset, while his feel for domestic politics was more limited still.

Over and above this, there lies the objection that the more the confidential records of the 1930s and 1940s become accessible, the more it becomes evident that Eden's own studies, and *sapientia fabul* – generally in a way calculated to enhance the apparent presence and consistency of the writer's previous views and the success of his performance. On numerous occasions Dr Carlton himself notes that Eden's published record does not square with material now available: over his relations with Simon, for example, and with Barthou; his meeting with Hitler; his attitude to the Soviet Union in the 1930s; his attitude to Chamberlain and his policies after resigning in 1938; and so on. Not exactly, one would have thought, the mark of high-class political memoirs.

As to Eden the student of international affairs and practitioner of foreign policy, Dr Carlton does indeed conclude by posing some question marks over the record, but they are of a tentative and qualified kind which, again, do not appear to be wholly consistent with the judgments put forward earlier in the book. Given the space available, it must indeed suffice to endorse a selection of such assessments offered by the author *ambulando*: that, for example, Eden exhibited to a "striking degree" the tendency to exaggerate the extent of British power and influence; that he "seems only dimly to have grasped the extent to which his postwar world" was changing in respect of little grasp of the economic aspects of international relations; that in the 1930s his approach to foreign-policy issues was frequently either lacking in realism or dilatory.

And that (as over Turkey and Greece in 1941) his manoeuvres "on the ground" during the war were on several occasions lacking in weight and judgment. That Dr Carlton is also able to demonstrate, for instance, that other members of the Government shared Eden's responsibility for the enforced postwar repatriation of Russian prisoners in evidence pointing to the conclusion that as a Foreign Secretary Eden was essentially second-rate – much inferior to both Grey and Bevin, for example.

One wonders if it was the justly critical nature of many of his own assessments of Eden's performance, coupled with a biographer's natural inclination to attribute great significance to his subject, that led Dr Carlton to put forward two arguments concerning Eden's contribution to international developments which are, to say the least, difficult to accept. Both centre upon the period between 1938 and 1941, when the quasi-peace of Europe gave way to war, and when the conflict then widened into one of world-wide proportions.

In this context, the first of Dr Carlton's contentions is that Eden was largely responsible for the shift of British policy which produced guarantees to Poland and others, and that the declaration of war against Germany in September 1939 was "probably owed more to [him] than to any other British politician". The premise on which this conclusion is based is that Chamberlain felt obliged to change direction in the spring of 1939 because otherwise Eden might at any time "have thrown his lot with a moderate electoral coalition of Liberals and Socialists". Such reasoning bears little relation to Dr Carlton's own correct emphasis upon Eden's essential pliability in 1939 in the interests of resigning office in the existing Government (the "as determined" writes the author, "to give no new way to rival Chamberlain and his friends"), or to Chamberlain's continuing refusal to broaden his administration. It also involves the neglect of those other considerations, in the

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fields of both domestic and international politics which were mainly responsible for the change of policy in question.

A similar lack of perspective appears to be involved in the second of Dr Carlton's submissions: that not only had Eden, together with Churchill, by his behaviour between 1938 and 1941 "effectively caused the British to select the Soviets as their allies" in the war, but that both before and after the Soviet entry into the conflict he "helped to build up Moscow as a major world force". Hitler's underlying resolve to win living-space in the East and his part in driving Moscow and the West into the same camp; the Soviet Union's resources and gathering strength; Moscow's direct involvement in the Eastern as well as European affairs; these and other major factors, short-term and long, are pushed into the background, and the focus upon Eden becomes a distorting one.

This new biography, then, is something of a curate's egg. Dr Carlton provides the reader with valuable evidence and a good many shrewd judgments. On the other hand, some of his arguments appear to be odds with the evidence he has brought to bear, others to be lacking in perspective. At the same time, and this results from an understandable and clearly conscious decision on the part of the author – the book does not delve very deeply into Eden the man. It is essentially a political biography. As such, for all its merits, it again appears to fall short in two other respects.

In the first place, its descriptions and assessments of relevant developments on the international scene are not always adequate. When dealing with the onset of the Cold War, for example, and the related domestic and foreign-policy issues within the United States, Dr Carlton seems to omit not appears to have benefited from such important studies as Yergin's *Shattered Peace*, Shaw's *A World Destroyed*, Freedland's *Truman Doctrine and the Origins of McCarthyism*, or the essays on American postwar relations with China, *Uncertain Years*, edited by Borg and Helrich. And while he has wisely consulted various collections of unpublished papers in the United States that are relevant to a study of Eden, he has passed over others of importance: for example, the extensive, unpublished war-time diary of Harold Lickes, Secretary of the Interior, which is an essential source on Anglo-American oil politics concerning the Middle East.

More serious, however, is the book's neglect or near-neglect of certain crucial aspects of Britain's international positions and policies in the inter-war period. The most obvious category here is one of area and topic: in other words, certain immediate policy questions with which Eden and the Foreign Office were concerned receive inadequate attention (Far Eastern, commercial and financial matters throughout the period and during the war years, issues surrounding the nature and shape of a new international organization, as cases in point). More regrettable is the book's failure – despite its passing references to Britain's decline in the world – to assess the country's resources in the context of its overseas commitments and the place in the found changes taking place in the international system as a whole. Again, therefore, depth and perspective tend to be lacking, to such works as Milward's *War, Economy and Society in the Second World War*, Gowing's *Britain and Atomic Energy*, Gardner's *Sterling-Dollar Diplomacy*, and other economic and financial studies crucial to an understanding of Anglo-American relations during and after the war. No mention is made of one of the most fascinating set of memoranda written in the Foreign Office during the war, the surveys, produced by each department in 1944-45, of how British diplomacy and foreign policy was

likely to be affected by those dire financial circumstances which (as Keynes was desperately insisting) lay ahead. Indeed, Dr Carlton appears to have paid little attention to the unpublished Foreign Office papers as a whole for the war years, with their numerous minutes and notes by Eden himself. Keynes himself does not figure even once in the book. This is one glaring shortcoming in terms of Britain's international experiences: the changes taking place during Eden's political lifetime in the society in which he operated, and about the possible relationships between such changes on the one hand and foreign affairs, the Foreign Office itself, and Eden's own attitudes and career on the other. Another opportunity has been missed, in other words, to give the book the final reckoning, the book as a whole must be judged a disappointing work on these grounds. The promise within its pages make it all the more frustrating to contemplate the number of "occasions" when he might have remained closer to the subject.

As for Eden himself, for all the

All hanging out

Let's Talk About Me: a critical examination of the new psychotherapies by Anthony W. Clare with Sally Thompson
SBC Publications, £8.95 and £4.50
ISBN 0 563 17761 6 and 17887 5

Dr Anthony Clare is the author of *Psychiatry in Dissent*, the best guide in the subject for the intelligent layman. In *Let's Talk About Me*, he turns his robust common sense and pungent style to a critique of the numerous brands of psychotherapy that have arisen in recent decades.

Modern psychotherapies contain something for all tastes. If you want to be lulled, lectured, deprived of food, drink and sleep, then eat is for you. If you enjoy massage, try Rolfing or bioenergetics. For would-be seers there's always psychodrama. Fed-up with the intellect and want to forget the past and the future? Then live in the here-and-now under Gestalt therapy. Holism is for back-to-nature freaks who wish to sample herbal remedies. If you are disposed to blame your parents for your troubles, then you can take fantasized revenge in the primal scream. If you just want a sympathetic listener, Rogerian therapy will provide one, but don't expect him to give much in the way of advice. And if you want something a little more mystical you can always go to Poona or seek out your local maharishi.

You can have psychotherapy on your own, with your spouse, in a family group, and with anyone between ten and a thousand strangers; you can even have it with a prostitute, professionally known as a surrogate, though whether this is an offence under the Trades Description Act has yet to be determined. One of the few forms of therapy to escape Anthony Clare's trawl along the shores of California is crotch-eyeballing, in which one of the clients lies down naked with his or her legs apart while the rest stare long and hard at the exposed genitalia.

As Anthony Clare notes, many of the origins of these techniques descend from the name "psychotherapy" and try, often unsuccessfully, to bar the mentally ill from their proceedings. Some of the more extreme techniques could be – and indeed have been shown to be – damaging to the vulnerable, and even those in good mental health, apparently ran the risk of a broken limb if they attended the Ashram in Poona.

To the question whether these psychotherapies do any good, there is no simple answer. Each has satisfied customers who loudly proclaim that their therapeutic experiences have brought them moments of transcendence which changed their view of the world, gave them more self-confidence, made them able to give and receive love and so on and so forth. Even Bernard Levin, a man whom most would consider rational stops and his love of Wagner – found his experiences at the Poona Ashram liberating. Unfortunately, as any drunkard knows, transcendental experiences do not necessarily benefit one's daily life. And although a majority of students who attended encounter groups believed they had benefited by the experience, most of their friends thought it had made them worse.

Dr Clare is not the first to suggest that the popularity of the new therapies in the USA is due at least in part to the decline of orthodox religion and the family. He rightly protests that many of the new cults are treated both by their practitioners and by their clients as religions, but they conceal this aspect under the guise of therapy or pseudo-science. Unlike Christianity, but like many Eastern religions, they have nothing to offer in the way of a moral code. Indeed the emphasis on "doing your own thing" and "letting it all hang out" can be seen as a recipe for selfishness and lack of self-control. Moreover, most of the new psychotherapies deride the intellect. When asked by Anthony Clare to justify their techniques, many of the leaders produced a mumbo-jumbo of remarkable incoherence. To quote Werner Erhard of est, "Who I am is not this thing and who you are is not that thing but who I am is the space in which this thing and that thing occur". It is sad that so many people are so dissatisfied with their everyday lives that they seek solace in cults that are morally and intellectually impoverished and whose rituals contrast so sharply with the dignity and beauty of those developed by orthodox Christianity.

Stuart Sutherland

Stuart Sutherland is director of the Centre for Research on Perception and Cognition, University of Sussex.

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As for Eden himself, for all the

great expertise in international affairs, although it bears close examination scarcely better than does his anti-appearance halo, continued to cling to him for the rest of his life. As Prime Minister, he had indulged in what Dr Carlton rightly describes as "public pronouncements of staggering mendacity and hypocrisy". He had lied to the Commons, and where Profumo, confessing to the same misdeed, was disgraced, Eden, evasive to the end, duly received in life an Earl and, in death, the admiration of those fellow-countrymen who, perhaps, needed to preserve their illusions about him as part of their illusions about Britain herself.

At least, few looking back suggested that he should have replaced Churchill as Prime Minister before 1945. On that possibility, which had indeed existed in 1942, and on Eden the politician in general, let the last word go to the Australian High Commissioner in London during the war, Stanley Bruce. Smuts and he, he wrote in November 1942 in his diary (now accessible in the archives in Canberra), "were both agreed that Eden was weak, and did not approach that stature of a Prime Minister, and that it would be calamity if that came about". Yes indeed.

Christopher Thorne is professor of international relations at the University of Sussex.

BOOKS

Religions that defy belief

The Encyclopedia of American Religions, two volumes
by J. Gordon Melton
McGraw-Hill Publishing Company,
\$135.00 (the set)
ISBN 0 8434 0643 7

In over twelve hundred pages this two-volume encyclopedia covers nearly twelve hundred distinct religions which are to be found in the north American continent. Incredible though it may seem, this unique source for reference has been compiled by one man, J. Gordon Melton, an ordained Methodist minister who is currently director of the Institute for the Study of American Religion in Evanston, Illinois.

The institute itself is, to all intents and purposes, a one-man show, consisting of the (adjective) must be used again) unique collections of books, journals, newspaper cuttings, and indeed every conceivable type of literature concerning religion in America, but concentrating in particular on the lesser known, "alternative" religious organizations about which it is often practically impossible to obtain information. If information on these movements is available, however, the chances are that it will be

lying somewhere in the institute. The rooms are stacked from floor to ceiling with bulging shelves which are separated only by filing cabinets and cardboard boxes overflowing with circulars from mail-order churches, photocopies of correspondence between feuding acolytes, minutes of hushed-up meetings, the esoteric knowledge of sex magic, and theses on the life of John Wesley.

The religions in the encyclopedia are classified into 17 "families", each of which has a common heritage, thought world and life style. Ten of them are Christian-based. The "families" are broken down into groups which are then further sub-divided to reflect heresies and schisms. The first volume focuses primarily on the more established churches. It includes the Lutheran, the Reformed, Presbyterian, the Liturgical (Western and Eastern), the Pentecostal and the Adventist families. The second volume opens with the Church of Jesus Christ of Latter Day Saints and closes with the Kealaokalamalama (which, for those who know not, means "Way of the Light"), having passed from communes, new thought groups, New Age groups, neopaganism, the occult, witchcraft and satanism to the more familiar East-

ern and Middle-Eastern faiths of Judaism, Islam, Hinduism, Buddhism, Shintoism and Zoroastrianism and thence to "new, unaffiliated religious bodies".

There are of course omissions. The religions of the American Indians and gypsies have been deliberately excluded. But it would be churlish to complain about any gaps, for this is undoubtedly the best reference book of its kind not only for America but for the whole of the West. Quite apart from the invaluable source of information there are many delightful hours to be spent investigating the Holy Grail Foundation, the American school of Mentalvolology, the Ann Ree Colton Foundation of Nisience, or the Holy Ukrainian Autocephalic Orthodox Church – not to mention Gay Synagogues or the Kennedy Worshipers (yes, JFK is, to the believers, a god who gave his life for his people to warn them of evil around them), and so on.

Blake was right: Wondrous the gods, more wondrous are the men.

Eileen Barker

Eileen Barker is lecturer in sociology at the London School of Economics.

Prophet of the consumer age

The Hidden Persuaders, new edition
by Vance Packard
Penguin, £1.50
ISBN 0 14 02585 3

There is a certain nostalgia attached to Packard's *Hidden Persuaders*. I associate it – along with Young's *Rise of the Meritocracy*, Whyte's *The Organization Man*, and Hoggart's *Uses of Literacy* – with the sort of reading recommended to intending sociology students in the early and mid 1960s; or which led people in those days to think that the social sciences might be worth studying at all. How appropriate it seemed then. For Packard's book chronicled, in its foreword, the concerns and the pre-occupation of the postwar period.

Out of depression and wartime austerity the West moved into a period of substantial, if short-lived, affluence. *The Hidden Persuaders* was one of those books which brought home to us the immense social changes of which we were a part: the shift from ascension to achievement; from entrepreneurial to corporate capitalism; and, in Packard's case, from the deferred gratification of producer society, to the incipient hedonism of consumer society.

For, with postwar recovery came what appeared to be the end of the problem of production. Modern methods meant that, in many areas of manufacture, there was less difficulty in producing sufficient quantities of a commodity for the market, than in persuading consumers to buy all that could be produced. Hence the development of marketing as a subject of intensive study and practice, and the transformation of domestic economies in the cause of consumption. Saving yielded place to hire-purchase; customer assistance to self-service; the corner store to the supermarket and then the hypermarket; cash – hard-earned and thoughtfully expended by a generation that had survived the depression – to the credit card, that "plastic passport to paradise" for the newly affluent masses in the postwar boom. And in Britain at least, the quiet dignity of Reithian radio gave way to the frolic fascination of commercial television.

It was commercial television, of course, which revolutionized advertising. What had hitherto involved a largely informational role advising the public of the existence of a product, its uses, price and maker's name, became a frantic battleground in which competing producers and

their advertising agencies sought to capture popular awareness and commitment, through a determined appeal to our most basic, and at times our least worthy, emotions and desires.

For advertisers had discovered the economic irrationality of much consumption; that a good deal of it had more to do with communication than with straightforward budgeting considerations. Consumption, they had learned, was often about telling people who we were, or more importantly, about telling people with whom we wished to associate, that we were like them. It was sometimes about compensating for past or present insecurities, or investing in a fantasy of escape from unsatisfactory circumstances. At times it was even a matter of label design or package colour which could, apparently, radically affect our discrimination of taste, texture, durability and efficacy.

Packard did a first-rate journalistic job on this new field of consumer manipulation. He scored the growing literature in marketing psychology and consumer research, and interviewed countless account executives, reporting their grandiose claims to insight into human motivation, and frightening us with the possibilities for the exploitation of our innermost longings, and our most secret sentiments, for the crass purposes of commercial – or even political – profit.

Published in the late fifties, *The Hidden Persuaders* not only celebrated the birth of mass consumption, it also confirmed the prevalent belief in the power of science and technology. Not only had these resolved humanity's material needs, but they were, apparently, on the threshold of determining the final form of the laws governing human behaviour and motivation. Doubtless that is why this book was commended to inquisitive social scientists. On the accounts of Packard and his advertising executives, the social scientists not only possessed the means for uncovering the truths of human conduct, but this knowledge was actually of some commercial value.

Published at that time, the book also resonated with the converse of the contemporary faith in science in the form of psychology, psychiatry and the like; that is, with the fear – precipitated by the Korean war, and the disloyal words and actions of captured GIs – that so routinely powerful had those activities become, that any one of us could fall prey to "brainwashing", to the control of our minds by psychological

techniques particularly through the compelling new medium of television. Packard skillfully played upon such anxieties; by this and other means deploying in his own work the methods he affected to warn us against in the communications of others.

Later in the 1960s, the book could continue to draw an audience not merely as an exposé, but through its articulation with the developing New Left themes presented without benefit of empirical evidence by writers such as Marcuse, that advanced capitalism could continue to survive only through the stimulation of false "needs", and the phoney liberation of eroticism and hedonism which continued to enslave and exploit the masses through new forms of alienation and false consciousness. Hence Packard's book had the lucky fate of appealing to both right-wing and left-wing libertarians and their respective hostilities to the large corporation and centralized control of communication.

But almost 25 years after it was first published, can *The Hidden Persuaders* really merit a "new edition for the 1980s"? I suspect that it was too much a child of its times. Like those extraordinary fifties American cars with the extravagant chrome and tail-fins, this book was a product of new affluence. It now appears a little naive, like the behaviour of some of the consumers it describes, bedazzled by the Aladdin's Cave riches of an Eisenhower era supermarket; falling into a near hypnotic trance as they load their trollies with goods selected solely for their unconscious appeal rather than from need. We are now more cynical of advertisers – as of politicians and their public relations – and less sanguine about the prospect of psychoanalysis, or any other available form of psychology, really laying bare our inner motivations and springs of action sufficiently to control our behaviour more than marginally.

Yet no nation whose Prime Minister seeks guidance from precisely such agencies in the image-creation business as Packard describes, on how to wave her hair or modulate her voice; nor whose children can sing so faultlessly the beans or cornflakes advertisements of the day, can afford to dismiss *The Hidden Persuaders* as entirely passé.

Roy Wallis

Roy Wallis is professor of sociology at the Queen's University, Belfast.

BOOKS

The soft harmonies of man and nature

An Introduction to Physical Properties of Large Molecules in Solution by E. G. Richards
Cambridge University Press, £18.00 and £5.95
ISBN 0 521 23110 8 and 29817 2

The Physical Behaviour of Macromolecules with Biological Functions by S. P. Spragg
Wiley, £13.50
ISBN 0 471 27784 3

The study of synthetic polymers in solution has gone on side by side over several decades with that of biological macromolecules but it is interesting to note how little the two fields have overlapped.

One major difference lies in the fact that all but a small number of synthetic polymers are soluble only in organic solvents, whereas biopolymers are studied mainly in their natural and unique solvent, water. Synthetic polymers are heterogeneous with respect to their relative molecular mass. In solution they vary from more expanded to less expanded distributions of their generally uniform and regular chains in the solvent and much of the theory is devoted to the thermodynamics and statistics of these distributions. The majority of biopolymers are homogeneous and assume, partly as a result of their intramolecular conformation associated with biological function and it is only when "denatured" that they resemble their synthetic counterparts.

The main feature that the two fields of study have in common is

that the techniques used are the same, viscosity, light scattering, sedimentation and other means of measuring molecular weights and dimensions being familiar to the polymer chemist as to the physical chemist. For those biopolymers which occur naturally in solution, one of the main features of interest is their limited interaction. Even those globular proteins whose obvious biological function does not seem to depend upon association will frequently form dimers or larger aggregates and such behaviour can, at least in principle, be studied by the informed use of solution techniques.

It is interesting in this context to compare two recently published books concerned with the physical properties of macromolecules in solution. From their titles they would not seem to be competitors but they are in fact very different in context and in spirit.

Richards has written a textbook within the broad discipline of biophysics, in general taking synthetic polymers as his starting point and linking them to biopolymers when appropriate and when possible. The emphasis throughout is on the solution properties and their interpretation in terms of models rather than a description of the actual molecular structures and configurations.

A straightforward account of the types of non-covalent interaction which can influence the conformation of large molecules in solution is followed by a good introduction to the thermodynamics of such solutions. This is pitched at just the right level for the final-year undergraduate or the postgraduate student coming

to biophysics from biology, chemistry or physics. The essential mathematical formulations are there but presented in a non-mathematical way which is easy to follow and grasp. A similar level of treatment is given to a brief introduction of polymer statistics.

In both these chapters the emphasis is on synthetic polymers, as the author is introducing the basic theory which has been worked out with such molecules. The relatively small amount of work which has been attempted with the more flexible, less structured biological polymers such as polysaccharides and glycoproteins has shown how much less tractable such materials are than synthetic polymers.

Helix-coil transitions are treated from a theoretical standpoint, with a useful discussion of cooperativity, followed by a discussion of the transitions of polypeptides, polynucleotides and globular proteins. The treatment of gels and polymer networks is brief, while the hydrodynamics of large molecules and the properties of polyelectrolytes are discussed more thoroughly than is usual in a book of this length. There is an excellent chapter on the scattering of radiation by macromolecules contributed by S. D. Dover in which laser-light scattering is given appropriate emphasis, as is also the case in the book by Spragg.

A good bibliography for the next stages of study in this field is given for each chapter and problems are included to aid reinforcement when used as a student text. The use of this book will help the newcomer to understand some of the earlier developments in biophysics and may

stimulate someone to tackle the more difficult problems which remain in the behaviour of DNA, polysaccharides and the increasing number of naturally occurring polypeptides in solution.

The second book, by Spragg, is a monograph rather than a textbook, the coverage being limited mainly to a discussion of proteins and their behaviour in solution. The approach is to examine critically the experiments which may be carried out and their detailed interpretation. This is not at the moment a fashionable field of study. Such has been the impact of crystallography on our view of globular proteins that biochemists and biophysicists no longer turn to hydrodynamic experiments for details of size and shape. What has temporarily been lost sight of is that the strength of interactions between protein and protein and between protein and water can, at the moment, only be examined in this way. There are continual advances in the molecular detail of such interactions from X-ray crystallography and from molecular dynamics calculations but it is not yet possible to derive quantitative estimates of the degree of association.

Spragg starts out with the point that a considerable amount of information may be retrieved from a proper analysis of thermodynamic and hydrodynamic non-ideality. It is at this point that this monograph is particularly valuable and, to my knowledge, unique, for in the literature on non-ideal behaviour little attempt has been made to interpret the experimental results in terms of molecular interactions.

The second notable feature of this

study is the critical approach to old and newer techniques and to the interpretation which springs from the author's own experience in this field. A detailed examination, for example, of Baldwin's early study of serum albumin, highlights the possibility of "doing a quick molecule" but shows how heterogeneous can be taken into account in interpreting precise molecular properties in this context the discussion of electrophoresis and the limits of detection of impurities should be wider publicity. I know what means by "purification by dialysis" being that on the contribution of molecular flexibility to hydrodynamic properties. Quasi-elastic light scattering receives a full and clear treatment. Finally, the threat of molecular interaction which is through the book leads to a discussion of macromolecular interactions, basic mathematical models for interaction are considered and a possible error in the determination of interaction parameters is assessed.

Perhaps the most interesting macromolecules to study in solution are those whose prime biological function is to interact with water and with each other, viz. the high-boiled hydrolyzing glycoproteins. These two books should provide a good basis for future work in this area.

Roger H. N.

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A Chemist's Laboratory, signed and dated "L.R. 1827", an oil painting in the Museum of the History of Science at Oxford. The picture is said to represent Sir Humphry Davy with an assistant and is reproduced from *Great Scientific Experiments: 20 experiments that changed our view of the world*, published by Phaidon Press at £8.95.

Exemplary goodness-of-fit

Statistics for Biologists by D. J. Finney
Chapman & Hall, £3.75
ISBN 0 412 21540 3

Professor Finney has based this book on a short course of lectures and tutorial classes to first-year students of biology. The initial topics are introduced carefully and with an emphasis on understanding the logic of the methods described rather than the underlying mathematics.

As is to be expected from Professor Finney, the book is a pleasure to read and the style must be reassuring to the biologist reading about statistics for the first time. The author has, or acquires, some mastery of symbols and of the terminology of the subject. Some facility and confidence in simple algebraic manipulation is also almost essential. This allows the reader to concentrate on the really important matters concerned with the logic of statistical argument and the importance of proper experimental planning and design. These matters are presented by example and justified by intuitive argument with no diversionary mathematical proofs.

Professor Finney introduces con-

tinuous variables through the use of cumulative distribution functions rather than density functions. This avoids the introduction of ideas concerned with limits and integrals - a relatively new and refreshing approach.

My only major criticism is that there is too much emphasis on null hypotheses and significance testing. I believe that some good scientists have neglected the use of statistics because they know that science is only rarely concerned with the null hypothesis but so important. Science is concerned not with null hypotheses but with models and with the problems of estimating the values of parameters in these models.

I also question Professor Finney's virtual dismissal of decision-taking as part of scientific inference. Although statisticians have not yet contributed a great deal to this particular aspect of decision theory, every experiment involves a series of decisions, for example which treatments to include, how many replicates to be sampled, how many replicates to be taken, how many replicates to be taken, how many replicates to be taken. In these experiments there is often an objective that can

be quantified and its expectation maximized. Professor Finney's dismissal of this decision-making approach is baffling when he writes on variational selection is among the best work of this kind.

I was also disappointed that the section on probability, as Professor Finney does not face the author's difficulties in defining the term. The good biologist will see through the superficial definition and realize whether other concepts are being presented without a full discussion of their difficulties.

The majority of problems brought to statisticians by biologists are concerned with relationships between variables. Misunderstanding of variables is common in the next edition I hope that there will be more on regression, simple and multiple.

My criticisms are, however, minor. The book can be recommended as a good first text for biologists that will introduce them to the important ideas and methods of statistics, whatever their level of mathematical ability and confidence.

R. N. Curnow

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BOOKS

Political ideology and urban phenomena

Urban Problems and Planning in the Developed World
edited by Michael Pacione
Croom Helm, £13.50
ISBN 0 7099 0191 7

Planning in the Soviet Union
by Judith Pallot and Dennis J. B. Shaw
Croom Helm, £16.95
ISBN 0 85664 571 0

Cities retain their fascination for geographers and planners alike. This is as it should be, because planning is a response to nineteenth and twentieth century urbanization, and geography provides many of the analytical skills required for understanding the changing nature of our cities.

The link between the two disciplines was formerly quite simple: descriptive land-use patterns of the present (though with an acknowledgment of the evolutionary past) provided a basis for prescriptive land-use patterns of the future, on which healthy, convenient and beautiful cities might be built. But the understanding of urban phenomena now rests only in part on the distribution of things that can be mapped. Instead we have to account for spatial systems in terms of the political and institutional factors that determine locational patterns.

A great merit of these two books is that they place metropolitan geography firmly in this new context. We are asked to look at certain and regional maps in one country (Pallot and Shaw) precisely from the perspectives of political ideology, institutions, systems of governance, so-

cial attitudes and national culture. The results are informative and make a sound contribution to analytical geography in the new socio-political mould.

The books also add a healthy perspective to planning. At the end of the nineteenth century the primacy of big city development lay with Western Europe where London, Paris and Berlin were pre-eminent. It so happened (and the link is obvious) that contemporary forms of (for the moment we can conveniently forget the city beautiful movement in the United States), Western European prescriptive planning ideas followed a broadly decentralised view, in which dispersal, green belts, satellite towns and planned population distribution appeared as regular themes. This became the world planning model. But how wrong it is to assume that the Western European ideal can be thrust on to cities with different political, institutional and cultural structures. Moreover, the big city is no longer a Western European phenomenon; our little corner of the world has long been overtaken by North America, South East Asia and elsewhere. The world city giants of today are Tokyo and Mexico, very different cities in form and function to the ones of British and Western European experience.

Pacione's contributors offer eight case studies: New York, Melbourne, Tokyo, Johannesburg, Glasgow, Barcelona, Warsaw and Leningrad, all dealing with the nature of the contemporary city and the planning response. They are uniformly informative, although the last two are rather heavily descriptive (but anyone dependent on Russian and Eastern European sources is rather more

constrained than most). They successfully bring out the socio-political and cultural dimensions which determine so much the individual style, form and appearance of cities.

Nowhere is this made clearer than in Pacione's own chapter on Glasgow. By 1914 it had become an industrial city with little or no working-class suburbia, with 700,000 people resident within three square miles of Glasgow Cross, it was the most densely populated central area in Europe. There was a typical family budgetary pattern, with a lower proportion of income spent on housing than anywhere in Britain. In many trades wage levels were highly unstable, and the four to five storey tenement building proved ideally suited to a pattern of minimal expenditure on rents. Glasgow's subsequent history of housing and city planning stems from cultural origins of this kind.

It is regrettable that Pacione does not make more of this theme in his editorial introduction. His brief chapter hardly does justice to his contributors and sadly misses the opportunity for highlighting the reasons for and the implications of the spatial disparities observed in world cities.

Pallot and Shaw similarly move away from the traditional (land-based) viewpoints of urban and regional geography. They rightly maintain that an understanding of the spatial structure of the Soviet economy and society can only come from a consideration of the country's institutions of control, in addition of course to questions of environment, culture and history. The first three chapters of the book therefore consider Soviet ideology, politics, and

economic structures and development; the remaining chapters deal with aspects of spatial planning. An extensive bibliography of over 360 titles, the majority of them Russian, helpfully brings the fruits of a wide literature search to a grateful reader's linguistic skills. This is a most useful description and commentary on the Soviet planning system and deserves to be a standard reference for some time.

We cannot begin to understand Soviet urban and regional geography and planning without recognizing the unparalleled production and wealth of social and spatial equality, including equality in welfare, liberty and opportunity, and which regulates its relations, including those with nature, in the most rational possible manner" (page 13). What emerges from Pallot and Shaw's account is the infrequency with which this ideal has actually been achieved. The Soviet systems for reaching their objectives seem as imperfect as those in Western countries. As ever, policies are as dependent on recent events as they are on ideology. An extraordinarily complicated planning structure in the command economy lies heavily on a commitment to control the size of cities and to promote the rational, efficient use of resources.

Turning to cities, it has been claimed that a socialist society's ability to control the process of urbanization is a demonstration of its superiority to capitalism. But urban planning in the Soviet Union seems to be in the same disarray as in the West. A growing similarity between metropolitan structures in the USSR and in the United States may now be observed; there is the same lack of fit between settlement planning and other forms of planning; the reality of urban growth has exceeded forecasts; journeys to work have considerably increased; and the rural settlement pattern stubbornly resists a planned restructuring.

Pallot and Shaw fail to comment on one Western phenomenon, the inner city problem. There is evidence that at least in the older Soviet city, socio-economic disparities do exist between the central cores and the outer suburbs and it would have been useful to speculate on future trends of spatial distribution in the dynamic metropolitan city. There is the fascinating prospect that over time migration by Central Asians may introduce ethnic problems into the older Soviet city like those which characterize the West. How will the system cope with that?

Gordon E. Cherry

Gordon E. Cherry is professor of urban and regional planning, and dean of the faculty of commerce and social science at the University of Birmingham.

Games scientists play

Games and Simulations in Science Education
by R. I. Ellington, Eric Addinall and Fred Percival
Kogan Page, £10.95
ISBN 0 85038 338 2

The main aim of this book is achieved in the last seventy-two pages. These contain data sheets on 136 science-based exercises, giving all the details, on availability, cost, target audience, aims and resources, that a prospective user might need in drawing up a shopping list. This collection covers a variety of exercises, available for schools or higher education in this country. The preceding parts of the book form an extended user's introduction and guide.

Two introductory chapters discuss the distinctions between games, simulations and case studies, considering examples which overlap these categories, and go on to outline the reasons for using them. There follow three chapters, on card and board games, "Other Manual Exercises", and computer-based exercises. The nondescript label for the second group does not do justice to an interesting variety of individual and group projects involving various role-play tasks, in which, for example, sub-groups have to make serious technical preparations in order to argue their cases in competition before a mock tribunal or enquiry.

The final chapters provide guidance to the selection and use of the exercises listed in the data sheets. The practical advice here has the hallmark of extensive practical experience, and the detailed guidance, on adapting existing materials and on preparing and testing one's own inventions, is careful and thorough. The closing chapter deals briefly with evaluation.

As a reference guide to existing materials the book could stimulate wider interest and use. It will aid rapidly, the authors ask for help in adding to the lists of the exercises. However, only 13 of the exercises in the list were published outside the UK, 12 of these in the USA. In a collection that includes computer simulation programs, this must indicate limitations which need to be (and are not) discussed.

The main text amounts to less

than 100 pages without the diagrams. The brevity creates problems where broad issues are being attacked. These problems are not really solved in the chapter on evaluation: much of what is there will be misleading or puzzling to those not already familiar with the issues. A firmer decision to include only straightforward simple advice was needed here.

Elsewhere, the treatment seems to be constrained by the view that the whole issue is one of providing some new tools for old purposes. Thus, computer-assisted learning is judged to be mainly valuable in providing substitutes for laboratory exercises when the real experiments are not possible. The role of simulation exercises in work directed to learning through science or to learning about the effects of science and technology is rightly emphasized. But many of the claimed advantages, of fresh motivation and changed attitudes, can also be attained in and for work within the learning of science for its own sake. More generally, there is little to suggest that some one seriously believe, with Pappert, that as young children learn to use computers, this experience could alter the way they learn everything else.

There may even be profit in a broader approach of a different kind. Just as the rituals of chess may well have started as rules required by the realities of the warfare which it was meant to simulate, so many of our present learning procedures may be seen as versions, distorted over time, of past attempts to encounter reality through simulations and games. The advantage of a new simulation may then be twofold: it renews this process and thereby makes it explicit. Certainly our examinations, fall within the technical definition given here for games. The authors comment on experience with board games developed to teach concepts; these easily fail because the players generally take trouble to acquire only the knowledge and skills essential to playing well - all other material is ignored.

P. J. Black

P. J. Black is director of the Centre for Science and Mathematics Education, Chelsea College, London.

Marriage of physics and astronomy

The Physics-Astronomy Frontier
by Fred Hoyle and Jayant Narlikar
Freeman, £16.95
ISBN 0 7107 1160 5

"An underdog astronomer" wrote the poet Edward Young in 1745, "is mad". Although reason has now replaced faith as the hallmark of astronomical sanity, the successful practitioner must still retain a touch of devout passion to warm a cool head. On the one hand modern astronomy is a branch of physics, albeit accommodating, unimaginably more extreme than any under which they speculate exercise which demands a given many fresh insights into physical laws and processes. And for 40 years this fertile mind has blossomed with some of the most fruitful ideas in contemporary astronomy.

In 1975 Hoyle published *Astrophysics and Cosmology*, an introductory text which differed from its many competitors in taking the laws of physics as its backbone and painting the astronomical scene on these. It was nevertheless fairly conventional in its choice and ordering of subject matter. The book reviewed here is a largely a reworking of this earlier text, with major changes of emphasis. The material is now arranged in three sections: reflecting the different forces dealt with by physics, astronomy and cosmology.

The book has other close, though more conventional, arguments. The treatment of temperature, and of what constitutes a black body, is unusually rigorous; and one does not expect to meet, at the beginning of an introductory text, Feynman's path-integral interpretation of quantum mechanics. Indeed the general tenor of this book, eschewing mathematics and appealing always to physical principles and insight, is strongly reminiscent of Feynman's Caltech lectures on physics. I feel that, except perhaps in chapter 14, Hoyle and Narlikar succeed where sometimes Feynman fails, in getting a relatively naive student to appreciate what all the fuss is about.

I found the book a pleasure to read. Without detracting from Narlikar's major contribution, Hoyle's "I was there" approach to astronomical history reflects not immodestly but rather the depth and breadth of his involvement in the subject. The reader is not spared the latest controversies, but is clearly warned that they constitute unfinished business. However, some of the more contentious sections of *Astrophysics and Cosmology* have been omitted; Hoyle's views on the origin of life, for example, and the discussion of statistical correlations between quasars and normal galaxies. The omission of other topics signifies more clearly that the text is introductory. There is no vital theorem, nor any account of energy transport. This should not worry the reader, although the average British student may question the assumption that he is so completely ingenuous in matters mathematical.

This invigorating and thought-provoking book is beautifully produced, in traditional *Scientific American* style. It should be read by anyone interested in contemporary astronomy and willing to give some thought to the physics underlying it.

John Edgington

John Edgington is senior lecturer in physics at Queen Mary College, London.

A new series on *Themes in Urban History* has been launched by Leicester University Press under the general editorship of Derek Fraser. Each volume will bring together three or four significant essays - originating in these but now especially rewritten - to provide a "conspectus of new knowledge on a specific theme". The first volume, *British Town Planning: the formative years*, edited and introduced by Anthony Sutcliffe and now available at £14, deals with the period from the late nineteenth century to the early 1920s and presents a survey of planning links with four essays on planning links with housing, the foundation of the planning profession; early planning in Manchester; and the contribution to planning theory and practice made by the Unwin-Parker partnership.

8 September 1981 is International Literacy Day

Energy Conservation: A Basic Education Pack

Published jointly by ALBSU and the Department of Energy, the Pack is aimed at students and tutors in basic education and provides a range of activities of varying difficulty in four main areas of energy conservation.
ISBN 0 908509 08 2 Price: £1.75 plus 36p postage.

Widening Horizons: a handbook for Literacy Tutors working with Spastic Adults

This handbook, produced jointly with the Spastics Society, is published on 18 September 1981. It is intended for tutors with some experience of literacy teaching, the book offers background information on some of the problems that face spastic people, and gives the tutor new to this area of work a number of ideas on ways of tackling common learning difficulties.
ISBN 0 908509 10 6 Price: £1.00 plus 16p postage 36pp.

Literacy, Numeracy and the Young Trainee

A Handbook for Supervisors of Youth Opportunities Schemes, which suggests ways of recognizing trainees' needs and gives some advice on ways to help trainees in the normal course of a day's work.
ISBN 0 908509 04 1 Price: £1.00 plus 24p postage. 32 pp.

Adult Literacy Unit - Development Projects 1978-80

Description of the work of the 35 Special Development Projects sponsored by the Adult Literacy Unit. It sets out the Unit's approach to sponsorship and attempts to draw together some threads which appear to have relevance for the future development of literacy and basic education.
ISBN 0 908509 05 X Price: £1.75 plus 50p postage. 68 pp.

Other titles include:

An Introduction to Literacy Teaching
ISBN 0 908509 03 3 Price: 80p plus 16p postage. 52 pp.

Starting Points... An Ideas Pack for Literacy Tutors
Price: £2.00 plus 60p postage.

From Wages to Widescale: Worksheets and How We Have Used Them
Price: £2.00 plus 80p postage.

Caribbean English and Adult Literacy, by Roxy Harris
ISBN 0 908509 01 7 Price: 60p plus 12p postage. 40 pp.

ALBSU was established by the Department of Education and Science to act as a central focus for adult literacy and basic skills work in England and Wales. The Unit operates a consultancy/advisory service, sponsors and organises regional and national training, publishes books and other material and sponsors a limited number of innovative Special Development Projects.

Further information and orders to:
ALBSU, Kingsbourne House,
228/231 High Holborn,
London WC1V 7DA.
Tel: 01-405 4017

ALBSU
Adult Literacy & Basic Skills Unit

Universities continued

NEW ZEALAND
PALMERSTON NORTH
MASSEY UNIVERSITY

CHILDHOOD EDUCATION
Applications are invited for the above-mentioned position in the Department of Education. The post is available from March 1982 or as mutually agreed. The candidate appointed will act under the direction of the Head of Department of Education and will be required to undertake duties relating to educational policy in addition to internal teaching and research.

Applicants should have (i) appropriate academic qualifications (ii) professional experience and (iii) commitment in the field of Early Childhood Education.

Salary within the range of NZ\$15,140 - \$25,250.

Further details of this position and of the University, together with the general conditions of appointment may be obtained from the Association of Commonwealth Universities, 100, Strand, London WC2R 0LP, or from the Registrar of the University of New Zealand, 100, Victoria Street, Auckland.

Applications close on 9 October 1981.

OTAGO
UNIVERSITY OF
DUNEDIN, NEW ZEALAND
ASSISTANT LECTURER IN
PHILOSOPHY

Applications are invited for the above-mentioned position in the Department of Philosophy. The post is available from March 1982 or as mutually agreed. The candidate appointed will act under the direction of the Head of Department of Philosophy and will be required to undertake duties relating to educational policy in addition to internal teaching and research.

Applicants should have (i) appropriate academic qualifications (ii) professional experience and (iii) commitment in the field of Philosophy.

Salary within the range of NZ\$15,140 - \$25,250.

Further details of this position and of the University, together with the general conditions of appointment may be obtained from the Association of Commonwealth Universities, 100, Strand, London WC2R 0LP, or from the Registrar of the University of New Zealand, 100, Victoria Street, Auckland.

Applications close on 30 November 1981.

PAPUA NEW GUINEA
UNIVERSITY OF
PORT MORSBY
DEPARTMENT OF CIVIL
ENGINEERING
LECTURER SENIOR

Applications are invited for the above-mentioned position in the Department of Civil Engineering. The post is available from March 1982 or as mutually agreed. The candidate appointed will act under the direction of the Head of Department of Civil Engineering and will be required to undertake duties relating to educational policy in addition to internal teaching and research.

Applicants should have (i) appropriate academic qualifications (ii) professional experience and (iii) commitment in the field of Civil Engineering.

Salary within the range of NZ\$15,140 - \$25,250.

Further details of this position and of the University, together with the general conditions of appointment may be obtained from the Association of Commonwealth Universities, 100, Strand, London WC2R 0LP, or from the Registrar of the University of New Zealand, 100, Victoria Street, Auckland.

Applications close on 30 November 1981.

UNITED
KINGDOM
UNIVERSITY OF
SURREY
DEPARTMENT OF CONTINUING
EDUCATION

UNITED has for many years successfully organised imaginative mid-career training and continuing education for graduates or professionals. In recognition of the rapidly growing need for a wide variety of such courses, ranging from a few days to several months, and for the development of modular courses at undergraduate level, a new post of a Lecturer in Continuing Education has been created. The post is available from March 1982 or as mutually agreed. The candidate appointed will act under the direction of the Head of Department of Continuing Education and will be required to undertake duties relating to educational policy in addition to internal teaching and research.

Applicants should have (i) appropriate academic qualifications (ii) professional experience and (iii) commitment in the field of Continuing Education.

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Applications close on 30 November 1981.

NEW ZEALAND
VICTORIA UNIVERSITY OF
WELLINGTON
POLITICAL SCIENCE

Applications are invited for the above-mentioned position in the Department of Political Science. The post is available from March 1982 or as mutually agreed. The candidate appointed will act under the direction of the Head of Department of Political Science and will be required to undertake duties relating to educational policy in addition to internal teaching and research.

Applicants should have (i) appropriate academic qualifications (ii) professional experience and (iii) commitment in the field of Political Science.

Salary within the range of NZ\$15,140 - \$25,250.

Further details of this position and of the University, together with the general conditions of appointment may be obtained from the Association of Commonwealth Universities, 100, Strand, London WC2R 0LP, or from the Registrar of the University of New Zealand, 100, Victoria Street, Auckland.

Applications close on 31 October 1981.

NEW ZEALAND
VICTORIA UNIVERSITY OF
WELLINGTON
CAREERS ADVISER

Applications are invited for the above-mentioned position in the Department of Careers Advising. The post is available from March 1982 or as mutually agreed. The candidate appointed will act under the direction of the Head of Department of Careers Advising and will be required to undertake duties relating to educational policy in addition to internal teaching and research.

Applicants should have (i) appropriate academic qualifications (ii) professional experience and (iii) commitment in the field of Careers Advising.

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THE LADY DAVIS FELLOWSHIP TRUST
P.O. Box 1255, Jerusalem 91000, Israel.

Fellowships for Study and/or Research at Graduate or Post-Doctoral Levels and Visiting Professorships in 1982-83

at the Hebrew University of Jerusalem and at the Technion - Israel Institute of Technology, Haifa

Graduate and Post-Doctoral Fellowships

Eligibility: Lady Davis Fellows are selected on the basis of demonstrated excellence in their studies, promise of distinction in their chosen fields of specialization and qualities of mind, intellect and character.

Post-doctoral candidates must have completed their doctoral dissertation before arrival in Israel. The Graduate and Post-doctoral fellowships are tenable for a period of one year. They may be renewed for a second year and in special circumstances extended to a third year.

The grant is intended to defray the cost of the Fellow's travel and tuition fees and to meet reasonable living expenses.

Application: Graduate candidates may apply during their senior undergraduate year or after they have undertaken study in a graduate school. Post-doctoral candidates may apply at an early stage of their professional career (not later than 3 years after completion of their doctoral dissertation).

Graduate and Post-doctoral candidates (including Israelis abroad) may obtain application forms from the Lady Davis Fellowship Trust at the above address, after they indicate the category of Fellowship for which they are eligible.

Completed applications must reach the office of the Trust not later than December 1, 1981.

THESE

Visiting Professorships

These Fellowships are intended for candidates with the rank of Full or Associate Professor at their own institute. They are tenable for periods from one trimester (or semester) to a full academic year.

Application: Forms may be obtained from the Lady Davis Fellowship Trust at the above address. Completed application forms must reach the office of the Trust not later than December 1, 1981.

THESE

SCIENCE & ENGINEERING RESEARCH COUNCIL

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& OVERSEAS (NATO)
FELLOWSHIPS

Applications for SERC Fellowships and Overseas (NATO) fellowships commencing in 1982/83 should be made to the Science & Engineering Research Council, P.O. Box 18, Swindon SN2 1ET.

For application forms telephone: Swindon (0793) 26222, Ext. 2172

CLOSING DATES FOR APPLICATIONS:

Senior Fellowships 30 November 1981

Advanced Fellowships 30 September 1981

Postdoctoral Fellowships 31 December 1981

Industrial Visiting Fellowships Apply at any time

RS/SERC Industrial Fellowships 31 October 1981 and 31 March 1982

Overseas (NATO) Fellowships: In Europe 12 January 1982 and 10 May 1982

Outside Europe 31 December 1981

THESE

Polytechnics

NORTH EAST LONDON POLYTECHNIC

DIRECTOR

The post of Director of the North East London Polytechnic will become vacant on 1 September 1982 following the retirement of Dr G. S. Brogan. The Governors of the Polytechnic seek to appoint a Director-designate to take up the full duties of the post from 1 September 1982 (Director with effect from 1 September 1982) and invite applications by 25 September 1981.

Salary: £26,679 (Inclusive)

Application form and particulars may be obtained from Mrs D. Hill, Management Services Division, Town Hall, East Ham, London E6 2RP or telephone 01-471 0819.

(Merham Council's 24hr answering service.)

NELP North East London Polytechnic

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THE HEBREW UNIVERSITY OF JERUSALEM

Jerusalem 91000, Israel

The Hebrew University of Jerusalem offers a small number of

POST-DOCTORAL FELLOWSHIPS

for the 1982-83 academic year in the Humanities, Social Sciences, Natural Sciences, Agriculture and Medicine.

Candidates may apply at an early stage of their professional career (not later than three years after completion of their doctoral dissertation) to P.O. Box 1255 Jerusalem 91000, Israel.

Completed application forms should be returned by 1 December, 1981.

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BRISTOL POLYTECHNIC

DEPARTMENT OF ENGINEERING

Applications are invited for the following posts, duties in connection with them as shown in the list.

LECTURER SENIOR in ELECTRICAL ENGINEERING - Ref No. 12570

Preference will be given to candidates with experience in the field of electrical engineering.

LECTURER SENIOR in THERMAL FLUID MECHANICS - Ref No. 12571

Preference will be given to candidates with experience in the field of thermal fluid mechanics.

LECTURER SENIOR in ELECTRICAL ENGINEERING - Ref No. 12572

Preference will be given to candidates with experience in the field of electrical engineering.

LECTURER SENIOR in ELECTRICAL ENGINEERING - Ref No. 12573

Preference will be given to candidates with experience in the field of electrical engineering.

LECTURER SENIOR in ELECTRICAL ENGINEERING - Ref No. 12574

Don's diary

Sunday

Arrived back from holiday yesterday. In spite of supposed long vacation, there were only just two weeks immediately following the end of the children's school term when a family holiday could be fitted in. Am always glad of the opportunity of being away each week in church - it was good to have a quiet hour in which to remember the Lord Jesus Christ in the breaking of bread.

Monday

First day back at work. Spend some time clearing desk of accumulated mail - mostly publishers' advertising and the waste bin fills up rapidly. PhD thesis arrived from India for me to examine - it couldn't have arrived at a worse time. It is beautifully produced and I only hope the contents are as good.

Over to the faculty office to deal with admissions. The Northern Ireland A level results, as usual, are first in. There are not too many UCCA forms to deal with - I feel I am being gently broken in for the flood of results tomorrow. This year universities are being sent A level results a few days before candidates receive them so that decisions can be made in peace, uninterrupted by phone calls from distressed candidates who have just received their results. Decisions fall into three categories: acceptance for those who clearly meet the terms of our conditions; offer, rejection, sadly, for those who clearly fail to come anywhere near the offer; borderline cases, which are set aside for further consideration and discussion with departments.

Tuesday

As expected, a lot of results come in today. Unhappily, the reject pile seems to be growing faster than the accept pile. Some candidates have such poor results that they ought never to have thought about university. I pause for a while to wonder whether my daughter's application at Leeds might at this moment be being dealt with by the admissions officer there. I begin to have some sympathy with parents who feel that their children's future is being adjudicated upon in a few short minutes by an admissions officer who must seem very remote. Perhaps a necessary qualification for all admissions officers should be to have a child who has been through this UCCA business. Results are being received at schools on Friday so Joanna, and all of us in the family, must possess our souls in patience.

A party play to catch the voters

In post-election euphoria, governments, favour action, immediate, short cuts. In mid-term, action man becomes moderation man, as the Government settles into the centre of the squish court and tries to stay there to win the next election. I shall call these strategies, respectively, *The Gordian Knot* and *The Moderate Agenda*. Since the knavish tricks of politics are increasingly infecting higher education, I offer some thoughts on them to assist those readers detect policy parallels.

First the *Gordian Knot*. Most politicians know only too well that the constraints of our pluralist society rule out short-cuts. The strait-jacket of the five-year parliament, the need to reward friends and paymasters and cement cracks in the party, all argue a certain moderation in office, whatever the exact small print of the manifesto commitment or the urgent rhetoric of the hustings. But there are always a few politicians (of whom I suspect our present prime minister and GLC

until then. It is somewhat tantalising that this year, for the first time, we do not have the full set of JMB results, so I cannot know her results in advance.

Wednesday

Another batch of results is expected at lunchtime. There is just time to clear my desk of yesterday's results before then.

Thursday

Today sees the last trickle of results in apart from some overseas results and special cases. The pile of borderline cases has grown substantially now. This year the UGC cut-backs mean that we must very carefully watch our admissions and not exceed quota. A meeting is arranged for early tomorrow morning to discuss the overall faculty situation and to decide on places that might be available in clearing. Hopefully we shall finish the meeting before the telephones start ringing.

Friday

The secretaries are busy answering the phones as I arrive in the office. It would be better if students who failed to make the grade would just think for a while before panicking into an alternative course. After the meeting to discuss admissions policy, I find the set of JMB results have arrived. I spend a few anxious moments setting up the microfiche reader before finding out Joanna has got 4 A's. Five minutes later she rings from her school - great jubilation.

My pile of UCCA forms is gradually being whittled down. I manage to fix up meetings with remaining departments to discuss borderline cases on Monday.

Saturday

I hope this can be a day free from any kind of decision making. Have to be up in time to get Andrew, Martin and Sara to the station to catch train to Bible camp near Riley. Home for coffee and then off in the car with Joanna and two Sunday School girls to camp near Oldham.

Gordon Hughes

The author is a senior lecturer in chemistry and an admission subver in the faculty of science at Liverpool University.

In response to rising costs and a peak in demand in relationship to supply, the economics of higher education has come to be one of the most active and also most controversial fields of modern economic analysis.

The final justification for an investment in higher education has come under particular attack from advocates of the short-term view. The question being asked is: "If a college education, particularly in the liberal arts does not lead immediately to the same career start as a degree in engineering, is it worth the personal and social investment, particularly if foregone income is added to the acquisition cost?"

This economic question is real but it is also answerable and in my judgment not the most urgent question. Harold Howe II, vice president of the Ford Foundation, once asserted that "economic analysis alone should almost never be the main consideration in deciding what to do about any large and important problem, although it can make a contribution to such decisions."

As illustration in social matters we decide to adopt health, defence, and welfare programmes not on the basis of their cost but for other reasons. The same is true in personal matters of marriage and career. Mark Lang of the University of London has also said: "The recent work in the economics of education warns us to keep rigidly distinct the questions of the goals of education from questions of achieving those goals more or less efficiently."

An important publication by the Carnegie Foundation provides some answers to the economic questioners. This volume, *Education, Income and Human Behaviour*, combining the work of contributors to a number of earlier Carnegie studies, deals with the impact of education on both annual and lifetime earnings, as well as on employment and job satisfaction. All of these relate to the private return to the individual of an investment made in higher education.

The general conclusion of the bulk of the studies is that investments in formal schooling yield a profit to the individual even after standardizing for the influence on earnings of innate ability and family background. The principal reason for the higher annual and lifetime earnings of college graduates is the increased value of time spent in the labour market as a result of the application of higher education.

The comparisons involve not only non-high school graduates but also other forms of investment. The lower limit of return from higher education still exceeds the borrowing cost. Thus the Carnegie Commission concluded that higher education is still a good investment, returning annually about 10 per cent or more on the amount invested.

The monthly and annual labour reviews of the United States Bureau of Labor Statistics come to essentially the same conclusion. Studies of income level by years of schooling show that the median and mean

Getting value for money out of study



George Rainsford

annual income of four-year college graduates is 50 per cent greater than high school graduates.

There is a similar correlation between the level of education and employment. The unemployment rate for 1979 for the total work force 16 years old and over was 9.1 per cent for high school graduates, 6.9 per cent for one to three-year college graduates, and 2.9 per cent for four-year or more college graduates.

Participation in the labour force is also strongly related to years of schooling completed, particularly for adult women. For example, a participation rate of 45 per cent for women 25 to 54 years old with less than a high school education compares with a rate of 64 per cent for women with at least a year at college. The percentages for single women in these categories are even more striking - 49 per cent compared with 92 per cent.

Educational attainment of the civilian labour force from 1952 to 1974 reinforces the proposition that college education affects employability. In the 22-year period, four-year college graduates in the labour force more than doubled, while elementary school graduates declined 66 per cent and high school graduates increased only 50 per cent.

There is also considerable evidence in the literature that education also affects nonmonetary but socially valuable things - that individuals benefit directly from education but so does society. Higher levels of education tend to provide better citizens and lower crime rates, more effective and frequent contributions to civic and social roles, higher savings rates, and better leisure relations, and better use of leisure time. All of these should have a positive impact on public policy questions about the support of higher education.

Some writers have used Bureau of Labor statistics to prove that the

advantage of going to college has declined in the 1970s. Their analysis faces the classical problem of the data growth curve in that their data are primarily involved with full-time availability and earning levels. The real economic test of a college education, however, is not the economic level of the first job, a college graduate is almost by definition more likely to enter a low cost ceiling job. The real economic test, comes at the peaking period of earnings levels but also job opportunities and options available at that age are critical factors. Long-term studies show dramatically that salary benefit and job options available for the college graduate substantially exceed those for the non-college graduate.

Not all college graduates may be doing what they want to do but they are not as "unemployed" as high school graduates. The number of PhDs driving taxicabs as their only source of income ten years out of graduate school is infinitesimal in spite of all the fuss that has been made about it. A taxicab driver who is unemployed has no other options. A PhD driving a taxicab has many particularly when the weight of the evidence appears to be on the side of those who think the market for highly educated manpower is quite adaptive and resilient.

The relative economic justification for a four-year liberal arts education compared with a technical education may in fact have declined in the 1970s due to oversupply and under-demand. The question of emphasis, however, becomes important. The modern liberal arts graduate is considered by some to be underemployed and also overeducated. However, higher earnings for college graduates are still a fact. Many in our society still aspire to upward social mobility, and college education is still one of the keys to that mobility. This is a world where technological change is rapid, where new social structures are constantly emerging, and where the quality of leadership is important. Formal schooling yields a substantial benefit in enhancing the problem-solving capacity of those being educated. The returns of this kind of education are greater in a world where change is relatively rapid than one in which change is relatively slow.

When these advantages are coupled with lower unemployment and higher job and life satisfaction, who can long sustain the argument that a nation we are educated beyond our capacity to benefit. Longer life spans, shorter working hours, the most, earlier retirement and a general increase in national income per capita on leisure and recreation, on culture and the arts, all argue that our current level of education is a glass half full, not a glass half empty.

A hospitable one for continuation of a major public investment in education but that is all the more reason to assert the case for it with every justification possible.

activity only properly pursued by a small and already too big, proportion of the population; and, as a meaning worse. The second stage of restraint on entry to higher education as cultural and economic restraint educational, and more open to the official Government dogma at the moment - although when politicians are asked to pronounce, addictions as they are to the greatest happiness of the greatest number tend to go in the other direction - as our Select Committee did in this issue last year. I suspect it is a battle between these two agendas which is at the heart of both the UGC cuts and the Green Paper on public sector higher education. The public sector higher education cuts connote elitism; and in any new outbreak of dogmatic cuts in public expenditure, an executive body and committee could save them and the colleges much more violently than the UGC has the universities. So, to the present government, ideology and monetarism as well as maidens in education, both the universities and the polytechnics should think particularly carefully about which Agenda they want to promote.

Now there have always been at least two scenarios for Moderate Agendas in higher education. The first paints higher education as an

Christopher Price

Polytechnic funding

Sir, - I should be grateful if you would extend the courtesy of your columns to enable me to correct the over-optimistic impression concerning the future financial situation of the polytechnic given in the article by Paul Flather (THES, August 21). The reinstatement of planned cuts of £800,000 following the earlier decision of the city council to alleviate £1,100,000 of the reduction of £1,900,000 in the AFE pool allocation, obviously affords considerable relief for 1981/82 and will, as reported, allow expenditure on procurement, books, teaching materials and equipment, to be restored to the 1980/81 level in real terms.

However, it is far too early to be confident of the AFE pool allocation for 1982/83, despite the expected move towards some form of unit cost funding. At the best this could result in the polytechnic obtaining a somewhat greater share of a diminishing cake.

In view of this uncertainty, the polytechnic is therefore adhering to its original strategy on staffing by continuing to aim at increasing the student-staff ratio from 9.6 to 10.0 by 1982. The restoration of our budget for 1981/82 will, however, allow areas of particular stress to be alleviated by limited appointment of temporary or part-time staff until the future is more certain.

Of these nine or 10 polytechnics with over 60 per cent of full-time equivalent students enrolled on expensive laboratory and studio based courses, Coventry already has the highest SS ratio. This has been achieved by careful attention to the economic design and operation of academically valid courses so as to preserve adequate opportunity for staff to engage in course and teaching development and research.

Yours faithfully,
M. E. FOSS,
Deputy director, Coventry (Lanchester) Polytechnic.

Sir, - In his article on polytechnic funding Paul Flather wrote: "It is hard to disagree that institutions should be funded equally according to some notion of the cost of their lectures per student". Without advocating a return to the bad old system, I find it quite easy to disagree with his statement because the concept of student-staff ratio (SSR) is too crude for use in determining resources - though it is hardly surprising that SSR correlates well with cost per student, this being determined mainly by staff costs.

As Tim Davies points out in his letter in the same issue, proper costing would be based on courses as major public investment in education but that is all the more reason to assert the case for it with every justification possible.

Curriculum development, validation, preparing and delivering lectures, updating book lists, setting examinations, etc., are activities requiring the same effort irrespective of student numbers but varying a great deal between subjects and with style of teaching. The number-sensitive activities such as giving tutorials, supervising laboratories, marking scripts, interviewing candidates, etc., depend on actual head-count rather than on full-time equivalent, which is used in computing SSR.

Without going through the full costing process, it would at least be helpful to put in terms of "basic costs" and "head-count costs" for subject groups. If nothing else, this would help to answer the perennial question about whether there is such a thing as economy of scale in higher education.

Yours sincerely,
JOHN HAWOOD,
Durham University Academic Information Service.

LETTERS TO THE EDITOR

Against a "University of Windsor"

Sir, - Your front-page article "Talks open on Windsor University plans" (THES, August 14) leaves some false impressions.

When Thomas Holloway founded and built the Royal Holloway College at Englefield Green a century ago, he endowed it with a site of nearly 100 acres where there is still ample room for academic development. However, the idea that Royal Holloway - which has 1600 students in the faculties of arts, music and science - should become the nucleus of a new university (whether called "The University of Windsor" or not) has never been advocated or supported by the college or by me as principal. "Windsor University" is the brainchild of a leading academic from another college of the university, Royal Holloway does not deride it, but it is not what we want.

In our statements to the Swinerton-Dyer Committee, we made it clear that the Royal Holloway College, one of the oldest schools of the university, has always been in practice fully part of London and our students and staff wish to remain so. We reminded Swinerton-Dyer that the Murray Report on the Govern-

ance of the University of London (1972) briefly suggested "some kind of amalgamation" among Bedford, Queen Elizabeth, Royal Holloway and Westfield, and envisaged a fuller development of our broad acres at Englefield Green within the London University framework. In 1973 there was active discussion of this, queried, like so much university forward planning, by the mounting financial difficulties from 1974 onwards. We told Swinerton-Dyer that we were interested in reviving the discussion; and his committee, as you say, suggested that the university court should investigate the possibility of a consortium on Royal Holloway's land, and drew in (as Murray had not) the name of Chelsea College.

So far, the court has made no response. Perhaps the court is waiting for a reaction from the colleges mentioned. Among us, this summer, there has been vigorous discussion at departmental level, as well as among principals - of future collaboration. The deans of the faculties at Royal Holloway have written to each of the deans at the other four colleges to suggest a radical regroup-

ing or consortium to ensure the future of our schools: ie, the formation of a new major institution within the University of London - not as a "take over" but as a "merger", in a flexible form as possible. The only practicable site for such a venture is the land owned by the Royal Holloway College. Plans already exist which could form the basis of a rapid development of this land to accommodate 4,000 students. The deans have invited reactions to this idea. It is not a proposal for a new university.

One view of the multi-faculty London colleges is that each will be driven to contend ruthlessly with the other ten to hang on to its resources, its departments and its sites; a psychology inimical to the federal ideals of London University. Another view, which I firmly hold, is that the five medium-sized colleges should reinforce themselves by building on their collective strength and agreeing on fundamental changes, made at speed.

Yours faithfully,
LIONEL BUTLER
The principal, Royal Holloway College, University of London.

University function

Sir, - I tried to understand Peter Scott's long leading article on the function of universities but found it difficult. He seems to suggest, for example, that "discovery and codification of knowledge" should take second place to the "cultivation of rationality". But does not the first of these in any case require and imply the second? And if we are to drop knowledge and take up rationality instead, what are we going to be rational about?

Let us not be afraid of stating that universities are about knowledge - both of the world of nature and the world of human culture. Their threefold function is the maintenance and reassessment of existing knowledge (scholarship), its extension (research) and its transmission (teaching). The core of university teaching is the training of the next generation of scholars and researchers, since with-

out this, knowledge will die. But the ultimate justification of universities is that, at least in the long term, their knowledge becomes available to society at large.

Many today seem to feel that much of our knowledge is uninteresting, useless or even harmful. Other critics may take the position that we cannot, in this country, take responsibility for the accumulated knowledge of mankind (accumulating, it may be said, at an embarrassingly high rate in, for example, the biological sciences) and that the task should be left to more prosperous nations such as the United States or perhaps Saudi Arabia. Such views should be challenged. We might not win the argument but we would at least be arguing about the real issues.

Yours faithfully,
J. R. S. FINCHAM,
Institute of Animal Genetics, University of Edinburgh.

Urban violence

Sir, - I was interested to see your item, "SSRC calls riot conference" (THES, August 28) and it occurred to me that your readers may be interested to learn that the Urban Sociology Study Group of the British Sociological Association is holding a meeting on "Violence and the City" at Manchester University on October 24. We hope to devote further meetings to the study of various aspects of urban violence during the forthcoming academic year.

Unlike the SSRC conference, the group's meeting was arranged well before the recent riots. It was evident to anyone thinking seriously

about these matters that urban tensions were likely to become acute in an age of unprecedented mass youth unemployment.

It is also evident that the current strategy of the UGC and the DES in attacking the social sciences is a disastrous mistake and that there is a particular need for the continued expansion of urban studies. After all, it is pointless to produce engineers, technologists and scientists to serve a society whose cities are going up in flames about them.

Yours faithfully,
FAITH ELLIOT,
Senior lecturer in sociology, Coventry (Lanchester) Polytechnic.

SERC awards

Sir, - Readers may have noted with interest and perhaps a degree of irony, your report by Mr McKie, that Salford and Bradford are among the six universities that have recently received substantial awards from the SERC for the establishment of digital laboratories (THES, August 14). Large grants of this nature are by no means singular events. At Salford, for example, this latest award contributes to a total of some £500,000 of research-funding for developments in digital applications to control and instrumentation which has been raised by a single group of workers

from external sources since January of this year. I have no doubt that this performance will be mirrored in the other "technological universities" which were recently singled out for special attention by the UGC.

Our report that 50 applications were made from university departments and six grants were awarded indicates a technological excellence which one hopes that the UGC would note and would look for an early opportunity to review their recent decisions.

Yours sincerely,
E. PARKER,
Pro vice-chancellor, Salford University.

Leicester poly

Sir, - With reference to the article (THES, August 28) regarding the Leicester Polytechnic "combined" studies course, we think it is important to point out an inaccuracy. This proposal was validated by the CNA as a BSc with Certificate in Education. The BSc award alone does not convey eligibility for recom-

mendation of Q.T.S.

In view of the current debate about the title of initial teacher education awards we feel the record needs to be set straight.

Yours faithfully,
ROBIN N. SMITH and MAUREEN SWEETMAN,
Assistant registrars for education and "interfaculty" studies, CNA.

The future of fusion power

Sir, - The highly interesting article by Robin McKie, "What future for fusion power?" (THES, August 14) refers to the obvious problems about safety margins and possible pollution that may force a decision against fast reactors, and to the almost astronomically high capital investments as well as the long lead in the case of fusion technology applications.

The article also says that wave and solar energy will certainly not fill the gap between the world's energy requirements and its ability to provide power, while natural sources such as oil and coal are in finite supply.

However, the article does not refer to the potential of short, medium and long-term energy conservation measures to reduce the energy wastage still prevailing in industry, transport and private consumption today, an inheritance of the pre-1973 period when energy costs were extremely low. Energy conservation resulting in a lower energy content and balance per unit of produced goods as well as in transport and other uses, together with the utilization of biomass could achieve a very high substitution of fossil fuels, particularly of oil, resulting in pushing the date of "finite" supply of oil and coal far into the twenty-first century.

An important point is that energy conservation and the substitution of oil by biomass does not require such large investments as in the case of fusion and fission.

The decisive point in evaluation of energy problems is the recognition of the solution to be sought not in a single panacea but in a number of components - factors, some of them representing a bigger and some of them smaller, but still important shares of the total.

A £ consists of 100p and the sum of 100p. equals one £.
Yours faithfully,
V. M. WOLPERT,
Wolpert & Jones (Studies) Ltd.,
24 St John's Road, London N.W.11.

University novels

Sir, - John Schellenberger's article on university novels, *Life After Lucky Jim*, was interesting and enjoyable. I published an essay on this topic myself, in *Twentieth Century* in 1964, and I can testify that the field is a surprisingly rich one. May I therefore take this opportunity to recommend three novels that Mr Schellenberger left out of consideration: *Autumn for Heroes* (1960) by Peter Fergusson showed, among other things, a girl questioning her conventional arts course - "all the irrelevant muck that keeps an establishment of inspirational deadbeats in the money". Keith Walker's *Running on the Spot* (1959) looked at the university establishment from the point of view of the final-year student who is in danger of being thrown out because he hands in "his half-length coffee-stained essays a week late". And Veronica Hull, in *The Monkey Puzzle* (1958), characterised the agony of finals - "Remembering that cold was more stimulating than heat, she wore a summer dress next day, and shivered so much that she could think of nothing but how cold she was".

Perhaps because of their predominantly negative tone - far more student-centred than *Lucky Jim* - none of these novels were as successful as they deserved to be at the time of publication. Yet they handled very enterprisingly certain aspects of human behaviour thought then to be abnormal. Their way of doing this can now be seen to have anticipated historians like Michel Foucault and psychiatrists like Giffen and Szasz. This is all the more reason to hope that some enterprising publisher will contemplate their release.

Yours faithfully,
PHILIP HOBBSBAUM
Reader in English Literature,
University of Glasgow.